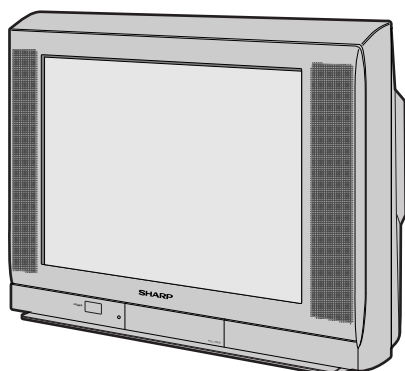




COLOR TELEVISION

Chassis No. GB-3U

MODEL

32C230

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified should be used.

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ELECTRICAL SPECIFICATIONS

POWER INPUT	120V AC, 60 Hz	SPEAKER	
POWER RATING	135W	SIZE	12 x 6 cm oval (2 pcs.)
PICTURE SIZE	3073cm ² (476sq inch)	VOICE COIL IMPEDANCE	16 ohm at 400 Hz
CONVERGENCE	Magnetic	ANTENNA INPUT IMPEDANCE	
SWEEP DEFLECTION	Magnetic	VHF/UHF	75 ohm Unbalanced
FOCUS	Hi-Bi-Potential Electrostatic	TUNING RANGES	
INTERMEDIATE FREQUENCIES		VHF-Channels	2 thru 13
Picture IF Carrier Frequency	45.75 MHz	UHF-Channels	14 thru 69
Sound IF Carrier Frequency	41.25 MHz	CATV Channels	1 thru 125
Color Sub-Carrier Frequency	42.17 MHz		(EIA, Channel Plan U.S.A.)
	(Nominal)		
AUDIO POWER			
OUTPUT RATING	3.0W + 3.0W (at 10% distortion and		
	Dual CH Operate)		

Specifications are subject to change without prior notice.

SHARP CORPORATION

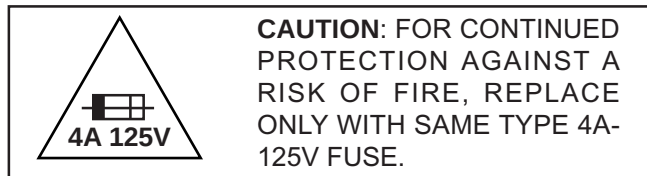
This document has been published to be used for after sales service only.
The contents are subject to change without notice.

IMPORTANT SERVICE SAFETY PRECAUTION

■ Service work should be performed only by qualified service technicians who are thoroughly familiar with all safety checks and the servicing guidelines which follow:

WARNING

1. For continued safety, no modification of any circuit should be attempted.
2. Disconnect AC power before servicing.
3. Semiconductor heat sinks are potential shock hazards when the chassis is operating.
4. The chassis in this receiver has two ground systems which are separated by insulating material. The non-isolated (hot) ground system is for the B+ voltage regulator circuit. The isolated ground system is for the low B+ DC voltages and the secondary circuit of the high voltage transformer.
To prevent electrical shock use an isolation transformer between the line cord and power receptacle, when servicing this chassis.



SERVICING OF HIGH VOLTAGE SYSTEM AND PICTURE TUBE

When servicing the high voltage system, remove the static charge by connecting a 10k ohm resistor in series with an insulated wire (such as a test probe) between the picture tube ground and the anode lead. (AC line cord should be disconnected from AC outlet.)

1. Picture tube in this receiver employs integral implosion protection.
2. Replace with tube of the same type number for continued safety.
3. Do not lift picture tube by the neck.
4. Handle the picture tube only when wearing shatterproof goggles and after discharging the high voltage anode completely.

X-RADIATION AND HIGH VOLTAGE LIMITS

1. Be sure all service personnel are aware of the procedures and instructions covering X-radiation. The only potential source of X-ray in current solid state TV receivers is the picture tube. However, the picture tube does not emit measurable X-Ray radiation, if the high voltage is as specified in the "High Voltage Check" instructions.
It is only when high voltage is excessive that X-radiation is capable of penetrating the shell of the picture tube including the lead in the glass material. The important precaution is to keep the high voltage below the maximum level specified.
2. It is essential that servicemen have available at all times an accurate high voltage meter.
The calibration of this meter should be checked periodically.
3. High voltage should always be kept at the rated value –no higher. Operation at higher voltages may cause a failure of the picture tube or high voltage circuitry and;also, under certain conditions, may produce radiation in exceeding of desirable levels.
4. When the high voltage regulator is operating properly there is no possibility of an X-radiation problem. Every time a color chassis is serviced, the brightness should be tested while monitoring the high voltage with a meter to be certain that the high voltage does not exceed the specified value and that it is regulating correctly.
5. Do not use a picture tube other than that specified or make unrecommended circuit modifications to the high voltage circuitry.
6. When trouble shooting and taking test measurements on a receiver with excessive high voltage, avoid being unnecessarily close to the receiver.
Do not operate the receiver longer than is necessary to locate the cause of excessive voltage.

IMPORTANT SERVICE SAFETY PRECAUTION (Continued)

BEFORE RETURNING THE RECEIVER

(Fire & Shock Hazard)

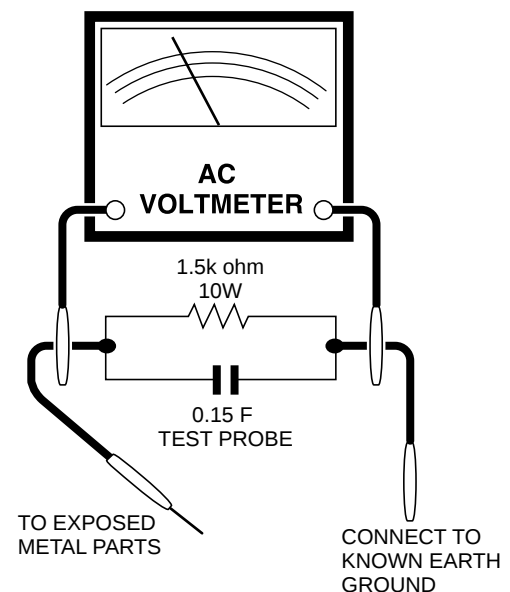
Before returning the receiver to the user, perform the following safety checks.

1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the receiver.
2. Inspect all protective devices such as non-metallic control knobs, insulating materials, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacity networks, mechanical insulators, etc.
3. To be sure that no shock hazard exists, check for leakage current in the following manner.
 - Plug the AC cord directly into a 120 volt AC outlet, (Do not use an isolation transformer for this test).
 - Using two clip leads, connect a 1.5k ohm, 10 watt resistor paralleled by a 0.15 μ F capacitor in series with all exposed metal cabinet parts and a known earth ground, such as electrical conduit or electrical ground connected to earth ground.
 - Use an AC voltmeter having with 5000 ohm per volt, or higher, sensitivity to measure the AC voltage drop across the resistor.

- Connect the resistor connection to all exposed metal parts having a return to the chassis (antenna, metal cabinet, screw heads, knobs and control shafts, escutcheon, etc.) and measure the AC voltage drop across the resistor.

All checks must be repeated with the AC line cord plug connection reversed. (If necessary, a non-polarized adapter plug must be used only for the purpose of completing these check.)

Any current measured must not exceed 0.5 milliamp. Any measurements not within the limits outlined above indicate of a potential shock hazard and corrective action must be taken before returning the instrument to the customer.



SAFETY NOTICE

Many electrical and mechanical parts in television receivers have special safety-related characteristics. These characteristics are often not evident from visual inspection, nor can protection afforded by them be necessarily increased by using replacement components rated for higher voltage, wattage, etc.

Replacement parts which have these special safety characteristics are identified in this manual; electrical components having such features are identified by "⚠" and shaded areas in the Replacement Parts Lists and Schematic Diagrams.

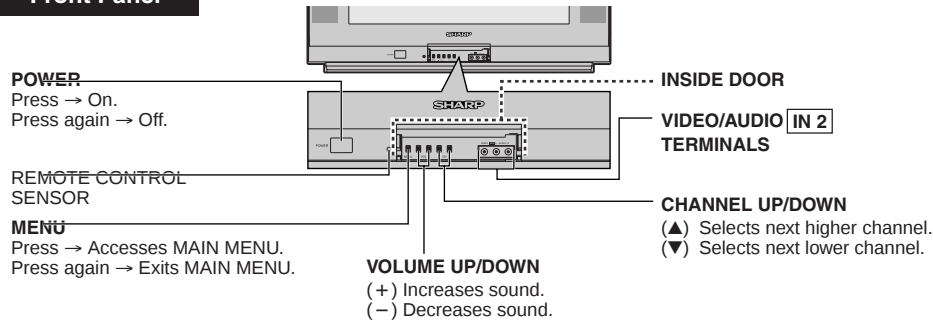
For continued protection, replacement parts must be identical to those used in the original circuit. The use of substitute replacement parts which do not have the same safety characteristics as the factory recommended replacement parts shown in this service manual, may create shock, fire, X-radiation or other hazards.

LOCATION OF USER'S CONTROL

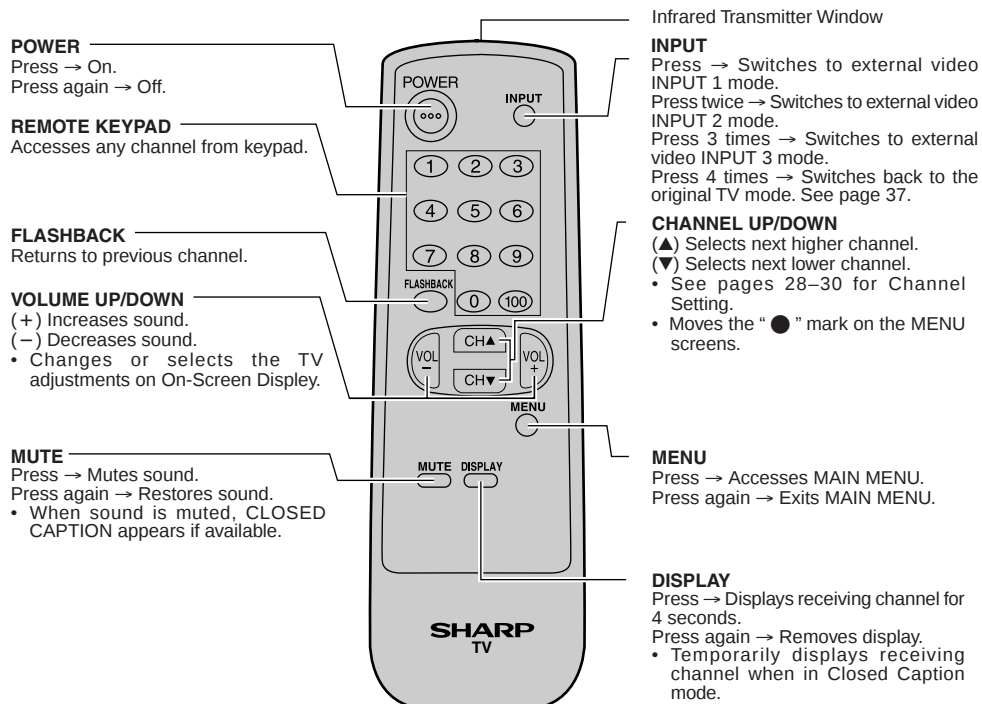
Quick Reference Control Operation

• Part Names

Front Panel



Basic Remote Control Functions



Note:

- The above shaded buttons on the Remote Control glow in the dark. To use the glow-in-the-dark display on the remote control, place it under a fluorescent light or other lighting.
- The phosphorescent material contains no radioactive or toxic material, so it is safe to use.
- The degree of illumination will vary depending on the strength of lighting used.
- The degree of illumination will decrease with time and depending on the temperature.
- The time needed to charge the phosphorescent display will vary depending on the surrounding lighting.
- Sunlight and fluorescent lighting are the most effective when charging the display.

INSTALLATION AND SERVICE INSTRUCTIONS

- Note:** (1) When performing any adjustments to resistor controls and transformers use non-metallic screwdrivers or TV alignment tools.
 (2) Before performing adjustments, the TV set must be on at least 15 minutes.

CIRCUIT PROTECTION

The receiver is protected by a 4.0A fuse (F701), mounted on PWB-A, wired into one side of the AC line input.

X-RADIATION PROTECTOR CIRCUIT TEST

After service has been performed on the horizontal deflection system, high voltage system, B+ system, test the X-Radiation protection circuit to ascertain proper operation as follows:

1. Apply 120V AC using a variac transformer for accurate input voltage.
2. Allow for warm up and adjust all customer controls for normal picture and sound.
3. Receive a good local channel.
4. Connect a digital voltmeter to TP651(pin 3) and make sure that the voltmeter reads $13.85 \pm 0.6V$ DC.
5. Apply external 17.3V DC at TP651 by using an external DC supply, TV must be shut off.
6. To reset the protector, unplug the AC cord and plug the AC cord power on. Now make sure that normal picture appears on the screen.
7. If the operation of the horizontal oscillator does not stop in step 5, the circuit must be repaired before the set is returned to the customer.

HIGH VOLTAGE CHECK

High voltage is not adjustable but must be checked to verify that the receiver is operating within safe and efficient design limitations as specified checks should be as follows:

1. Connect an accurate high voltage meter between ground and anode of picture tube.
2. Operate receiver for at least 15 minutes at 120V AC line voltage, with a strong air signal or a properly tuned in test signal.
3. Enter the service mode and select the service adjustment "V11" and Bus data "01" (Y-mute on, CRT Cut Off).
4. The voltage should be below 35kV (at zero beam). If a correct reading cannot be obtained, check circuitry for malfunctioning components. After the voltage test, make Y-mute off to the normal mode.

For adjustments of this model, the bus data is converted to various analog signals by the D/A converter circuit.

Note: There are still a few analog adjustments in this series such as focus and master screen voltage. Follow the steps below whenever the service adjustment is required. See "Table-B" to determine, if service adjustments are required.

1. Service mode

Before putting unit into the service mode, check that customer adjustments are in the normal mode. Use the reset function in the video adjustment menu to ensure customer controls are in their proper (reset) position.

2. Service number selection

Once in the service mode, press the Ch-up or Ch-down button on the remote controller or at the set. The service adjustment number will vary in increments of one, from "V01" to "P08". Select the item you wish to adjust.

3. Data number selection

Press the Vol-up or Vol-down button to adjust the data number.

To enter the service mode and exit service mode.

To enter the service mode manually just press and hold the Vol-down and Ch-up buttons at the same time, plug the AC cord into a wall socket.

Now the TV set is switched on and enters the service mode.

To exit the service mode, turn the television off by pressing the power button.

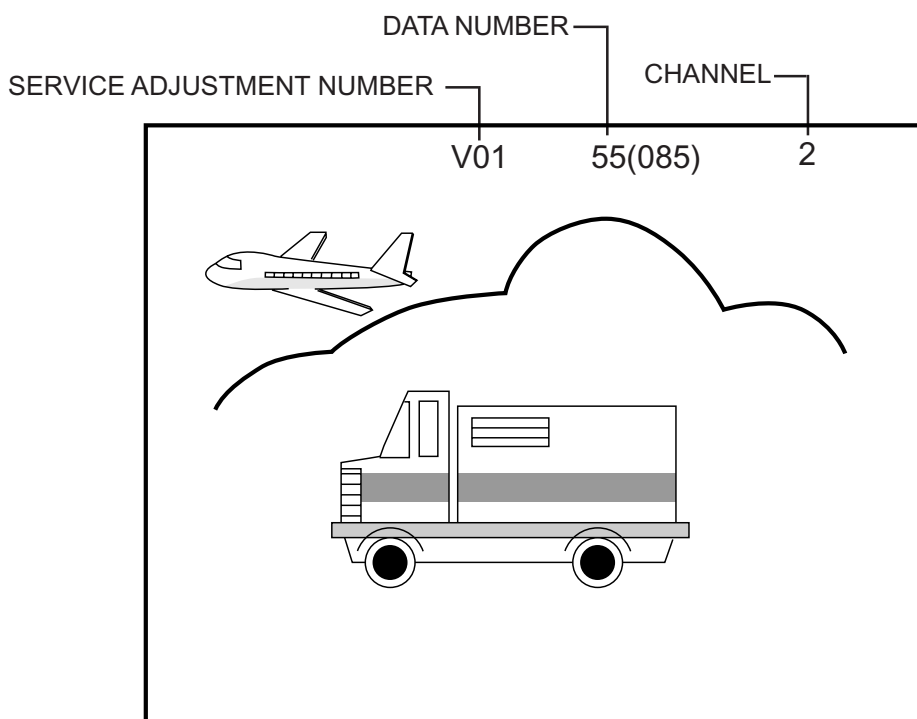


Figure A.

A. VCJ IC ADJUSTMENT

SERVICE NUMBER	ADJUSTMENT ITEM	DATA		NOTE	FIXED VALUE (HEX)	
		RANGE	INITIAL VALUE			
V01	PICTURE	0-15 (00h-0Fh)	8 (08h)	Y-Mute / Horizontal "┐"		
V02	TINT	0-127 (00h-7Fh)	66 (42h)			
V03	COLOR	0-127 (00h-7Fh)	56 (38h)			
V05	BRIGHT	0-127 (00h-7Fh)	64 (40h)			
V06	R CUT-OFF	64-255 (40h-FFh)	64 (40h)			
V07	G CUT-OFF	64-255 (40h-FFh)	64 (40h)			
V08	B CUT-OFF	64-255 (40h-FFh)	64 (40h)			
V09	G/R DRIVE	0-127 (00h-7Fh)	64 (40h)			
V10	B DRIVE	0-127 (00h-7Fh)	64(40h)			
V11	Y-MUTE/V-STOP	0-2	0 (00h)			
V12	SHARP	0-63 (00h-3Fh)	50 (35h)			35
V13	DC RESTORATION	0-3 (00h-03h)	2 (02h)			02
V14	BLACK STRETCH	0-3 (00h-03h)	2 (02h)			02
V15	ABL START POINT	0-3 (00h-03h)	3 (03h)			03
V16	ABL GAIN	0-3 (00h-03h)	2 (02h)			02
V17	γ POINT	0-3 (00h-03h)	0 (00h)			00
V19	ENERGY SAVE	0-63 (00h-3Fh)	63 (3Fh)	Offset	3F	
V24	LOW-G	0-255 (00h-FFh)	12 (0Ch)	Color Temp.	F4	
V25	LOW-B	0-255 (00h-FFh)	241 (F1h)	Color Temp.	E6	
V26	ML-G	0-255 (00h-FFh)	0 (00h)	Color Temp.	FD	
V27	ML-B	0-255 (00h-FFh)	247 (F7h)	Color Temp.	F8	
V28	HIGH-G	0-255 (00h-FFh)	2 (02h)	Color Temp.	01	
V29	HIGH-B	0-255 (00h-FFh)	8 (08h)	Color Temp.	06	
V30	WPL	0-1	1 (01h)		01	
V31	RGB CONTRAST	0-63 (00h-3Fh)	59 (3Bh)		3B	
V34	VSM GAIN	0-3 (00h-03h)	1 (01h)		01	
V36	BPF/TOF-INPUT	0-1	0 (00h)	External Input	00	
V37	CORING	0-1	0 (00h)		00	
V38	VSM PHASE	0-1	0 (00h)		00	
V39	COLOR γ	0-1	0 (00h)		00	
V40	SHARP-INPUT	0-63 (00h-3Fh)	44 (2Fh)	External Input	2F	
V41	TINT-INPUT	0-127 (00h-7Fh)	62 (3Eh)	External Input	3E	
V42	PICTURE-COMPONENT	0-15 (00h-0Fh)	6 (06h)	Component Input		
V43	TINT-COMPONENT	0-127 (00h-7Fh)	62 (3Eh)	Component Input	3E	
V44	COLOR-COMPONENT	0-127 (00h-7Fh)	72 (48h)	Component Input	48	
V45	BRIGHT-COMPONENT	0-127 (00h-7Fh)	84 (54h)	Component Input		
V46	R CUT OFF-COMPONENT	64-255 (40h-FFh)	64 (40h)	Component Input		
V47	G CUT OFF-COMPONENT	64-255 (40h-FFh)	64 (40h)	Component Input		
V48	B CUT OFF-COMPONENT	64-255 (40h-FFh)	64 (40h)	Component Input		
V49	G/R DRIVE-COMPONENT	0-127 (00h-7Fh)	64 (40h)	Component Input		
V50	B DRIVE-COMPONENT	0-127 (00h-7Fh)	64 (40h)	Component Input		
V51	SHARP-COMPONENT	0-63 (00h-3Fh)	44 (2Fh)	Component Input	2F	
V52	TINT-S	0-127 (00h-7Fh)	62 (3Eh)	S terminal input.	3E	
V53	C-TRAP	0-1 (00h-01h)	0 (00h)		00	
V59	AUTO FLESH	0-1 (00h-01h)	0 (00h)		00	
V60	SHARP P F	0-1 (00h-01h)	1 (01h)		01	
V61	CD MATRIX	0-3 (00h-03h)	2 (02h)		02	
V62	B-Y ATT	0-1 (00h-01h)	0 (00h)		00	
V63	R-Y ATT	0-1 (00h-01h)	0 (00h)		00	
V64	CD MATRIX-COMPONENT	0-3 (00h-03h)	0 (00h)	Component Input	00	
V65	B-Y ATT-COMPONENT	0-1 (00h-01h)	0 (00h)	Component Input	00	
V66	R-Y ATT-COMPONENT	0-1 (00h-01h)	0 (00h)	Component Input	00	
V67	BUZZ	0-1 (00h-01h)	1 (01h)		01	
V68	RGB ABCL	0-1 (00h-01h)	1 (01h)		01	
R01	RF-AGC	0-63 (00h-3Fh)	36 (24h)	Standard value for the self-adjustment	AA	
R03	RF-AGC REF	0-255 (00h-FFh)	170 (AAh)			
D01	V POSITION	0-7 (00h-07h)	0 (00h)		0B	
D02	H POSITION	0-31 (00h-1Fh)	15 (0Fh)			
D03	V SIZE	0-127 (00h-7Fh)	89 (59h)			
D04	H SIZE	0-63 (00h-3Fh)	36 (24h)			
D05	V-LINEARITY	0-15 (00h-0Fh)	8 (08h)			
D06	V-S CORRECTION	0-15 (00h-0Fh)	12 (0Bh)			
D07	EW PARABOLA	0-63 (00h-3Fh)	43 (2Bh)			
D08	EW TRAPEZIUM	0-63 (00h-3Fh)	36 (24h)			
D10	AFC GAIN	0-3 (00h-03h)	2 (02h)		02	
D11	V EHT	0-7 (00h-07h)	6 (06h)		06	
D12	H EHT	0-7 (00h-07h)	6 (06h)		06	
D13	EW CORNER	0-31 (00h-1Fh)	8 (10h)		10	

SERVICE NUMBER	ADJUSTMENT ITEM	DATA		NOTE	FIXED VALUE (HEX)
		RANGE	INITIAL VALUE		
D14	EW CORNER BOTTOM	19-81 (13h-51h)	50 (32h)	Offset toward D13.	32
D15	NOISE DET LEVEL	0-3 (00h-03h)	0 (00h)		00
D18	V CENTERING	0-63 (00h-3Fh)	36 (24h)		
D19	V-AGC	0-1 (00h-01h)	0 (00h)		00

B. SPECIAL SETTING

SERVICE NUMBER	ADJUSTMENT ITEM	DATA		NOTE	FIXED VALUE (HEX)
		RANGE	INITIAL VALUE		
EX1	FAO VOLUME	0-50 (00h-32h)	36 (24h)	Interrupt period adjustment.	24
EX2	CC-POSITION	0-127 (00h-7Fh)	27 (1Bh)		1C
EX3	INT	0-255 (00h-FFh)	122 (7Ah)		7A
EX4	A-ATT	0-127 (00h-7Fh)	90 (5Ah)		5A
EX5	TUNER data	0-3 (00h-03h)	0 (00h)		00
EX6	Think chip-Slice LEVEL	0-255 (00h-FFh)	54 (36h)	For the power control For the power control	12
EX7	RLY DELAY TIME	0-255 (00h-FFh)	0 (00h)		00
EX8	ADG ON TIME	0-255 (00h-FFh)	10 (0Ah)		0A

C. OPTION SETTING

SERVICE NUMBER	ADJUSTMENT ITEM	DATA		NOTE	FIXED VALUE (HEX)
		RANGE	INITIAL VALUE		
OP1	OPTION1	0-255 (00h-FFh)	247 (F7h)		B7
OP2	OPTION2	0-255 (00h-FFh)	253 (FDh)		3C
OP3	OPTION3	0-255 (00h-FFh)	15 (0Fh)		0C

D. SOUND ADJUSTMENT

SERVICE NUMBER	ADJUSTMENT ITEM	DATA		NOTE	FIXED VALUE (HEX)
		RANGE	INITIAL VALUE		
M01	INPUT LEVEL	0-15 (00h-0Fh)	7 (07h)		
M02	MTS VCO	0-63 (00h-3Fh)	38 (26h)		
M03	FILTER	0-63 (00h-3Fh)	36 (24h)		
M04	WIDEBAND	0-63 (00h-3Fh)	28 (1Ch)		
M05	SPECTRAL	0-63 (00h-3Fh)	23 (17h)		

Holding down both the VOL-up and CH-up buttons on the TV set at service mode for more than 2 seconds will automatically write the above initial values into IC2101.

PART REPLACED	ADJUSTMENT		NOTES
	NECESSARY	UNNECESSARY	
IC2001		X	Data is stored in IC2101.
IC201	X		The adjustment is needed to compensate for characteristics of parts including IC201 and MTS level (M01).
IC2101	X		Holding down both the VOL-up and CH-up buttons on the TV set in the service mode for more than 2 seconds will automatically write the above initial values into IC2101 Then perform a complete adjustment.
CRT	X		Adjust items related to picture tube only.
IC3001	X		Adjust items related to MTS only (M01~M20).

SERVICE ADJUSTMENT

RF AGC Adjustment

1. Receive a good local channel.
2. Enter the service mode and select the service adjustment "R01".
3. Set the data value to point where no noise or beat appears.
4. Select another channel to confirm that no noise or beat appears.

Note 1 : You will have to come out of the service mode to select another channel.

Note 2 : Setting the data to "00" will produce a black raster.

Screen Adjustment

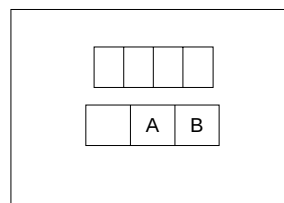
1. Receive a good local channel.
2. Enter the service mode and select the service adjustment "V03" and set the data value to "00" to set the color level to minimum. (Record original data code under adjustment "V03" before changing) You may skip this step, if you selected a B/W picture or monoscope pattern.
3. Select the service adjustment "V11" and adjust the data value to "01", this turn off the luminance signal (Y-mute).
4. Adjust the master screen control until the raster darkens to the point where raster is barely seen.
5. Adjust the service adjustments "V06" red, "V07" green and "V08" blue to obtain a good grey scale with normal whites at low brightness level.
6. Select the service adjustment "V11" and reset data to "00". Select the service adjustment "V03" and reset data to obtain normal color level.
7. For component input, the data value of "V46" red, "V47" green and "V48" blue is adjusted to follow the data value of "V06", "V07" and "V08" respectively.
8. Reset the master screen control to obtain normal brightness range.

White Balance Adjustment

1. Receive a good local channel.
2. Enter the service mode and select the service adjustment "V03" and set to "00" (minimum color)(Record original data code under adjustment "V03" before changing). "V03" does not have to be adjusted, if you selected a B/W picture or monoscope pattern.
3. Alternately adjust the service adjustment data of "V09" and "V10" until a good grey scale with normal whites is obtained. (RF Input)
4. For component input, the data value of "V49" and "V50" is adjusted to follow the data value of "V09" and "V10" respectively.
5. Select the service adjustment "V03" and reset data to obtain normal color level.

Sub-picture and Sub-Bright Adjustments

1. Receive the window pattern signal.
- RF INPUT (TU51)
2. Get into service adjustment data "V01" and "V05" and set the luminance as shown in figure "A" and "B" as below respectively.
- COMPONENT INPUT
3. Get in service adjustment data "V42" and "V45" and set the luminance as shown in figure "A" and "B" as below respectively.



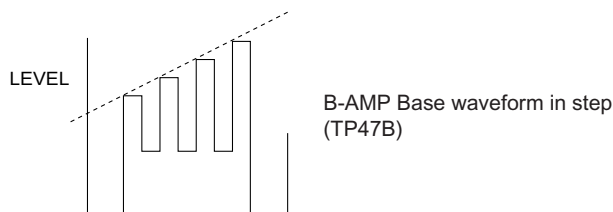
LUMINESCENCE CONFIRMATION

A: $92 \pm 10 \text{ cd/m}^2$

B: $1.1 \pm 0.5 \text{ cd/m}^2$

Sub-Tint Adjustment

1. Receive the half color bar signal.
- RF INPUT (TU51)
2. Get into Y-Mute by R/C, or by setting the "V11" bus data to "01".
3. Vary the "V02" bus data until the waveform becomes as stated below.



Sub-Color Adjustment

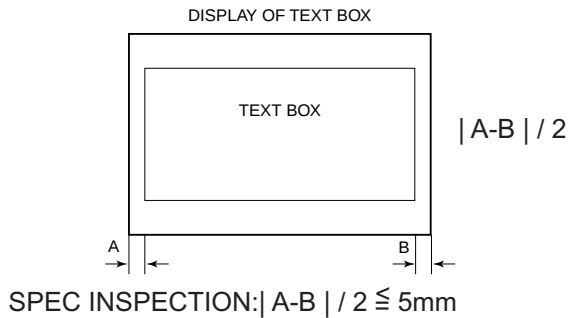
1. Receive a good local channel.
2. Make sure the customer color control is set to center position .
- RF INPUT (TU51)
3. Enter the service mode and select service adjustment "V03".
4. Adjust "V03" data value to obtain a normal color level.

Focus Adjustment

1. Receive a good local channel.
2. Adjust the focus VR of the flyback transformer to make the image as fine as possible.

C. C Display Position Adjustment

1. Receive the lion head pattern signal.
2. Select "EX2" to display the text box.
3. Adjust the "EX2" bus data to let the text box displayed in the center.



Vertical-Size and Linearity Adjustments

1. Receive a good local channel.
2. Enter the service mode and select the service adjustment "D03" for V-size.
3. Adjust the "D03" bus data to get the proper V-size.
4. For V-linearity adjustment, select data bus "D05" and adjust to get the proper vertical linearity.

Note: Aging for 10 min before adjustment. After the adjustment of V-center and V-size, re-adjustment for this V-line.

Vertical Phase Adjustment

1. Enter the service mode and input "D01" data value to "00h".
2. Adjust "D18" data value so that picture is centered.

Horizontal Position Adjustment

1. Receive a good local channel.
2. Enter the service mode and select the service adjustment "D02".
3. Adjust "D02" data value so that picture is centered.

Horizontal-Size Adjustment

1. Receive a good local channel.
2. Enter the service mode and select the service adjustment "D04" for H-size.
3. Adjust the "D04" bus data to get the proper H-size.

EW-Parabola

1. Receive a good local channel.
2. Enter the service mode and select the service adjustment "D07" for EW parabola.
3. Adjust the "D07" bus data to get the proper vertical straight line for both left and right side.

EW-Trapezium

1. Receive a good local channel.
2. Enter the service mode and select the service adjustment "D08" for EW-Trapezium.
3. Adjust the "D08" bus data to get the best position display.

■ MTS ADJUSTMENT

MTS Level Adjustment

1. Set the sound volume above 1.
Monoral signal: 400Hz, 100% modulation
2. Confirm "EX4" data is "5Ah".
3. Vary the "M01" bus data until the voltage to pin (39) of IC3001 to become the value as stated below.

SETTING VOLTAGE

ADJ spec : $490 \pm 10\text{mVrms}$

CHK spec: $490 \pm 20\text{mVrms}$

MTS VCO Adjustment

1. Keep the unit in no-signal state.
2. Connect the frequency counter to pin (39) of IC3001.
3. Connect a capacitor (100 μ F, 50V) in between positive(+) side of C3005 and ground.
4. Enter the service mode and select the service adjustment "M02"
5. Adjust the data so that the frequency counter reads $62.94 \pm 0.75\text{kHz}$.

Filter Adjustment

1. Feed the following stereo pilot signal to pin (14) of IC3001 at C3005 open.
Stereo pilot signal: 9.4kHz, 600mVrms.
2. Enter the service mode and select the service adjustment "M03".
3. Adjust the data until "OK" appears in position on the screen. Make sure the "OK" is displayed almost at the center of the data range.

Separation Adjustment

1. Input "SIGNAL 1" and vary the "M04" bus data to get the minimum AC voltage to pin (39) of IC3001.
2. Input "SIGNAL 2" and vary the "M05" bus data to get the minimum AC voltage to pin (39) of IC3001.
SIGNAL 1: 300Hz, 30% modulation, Lch only, NR-ON
SIGNAL 2: 3kHz, 30% modulation, Lch only, NR-ON

Note: SIGNAL 1 Adj. for wideband

SIGNAL 2 Adj. for spectral

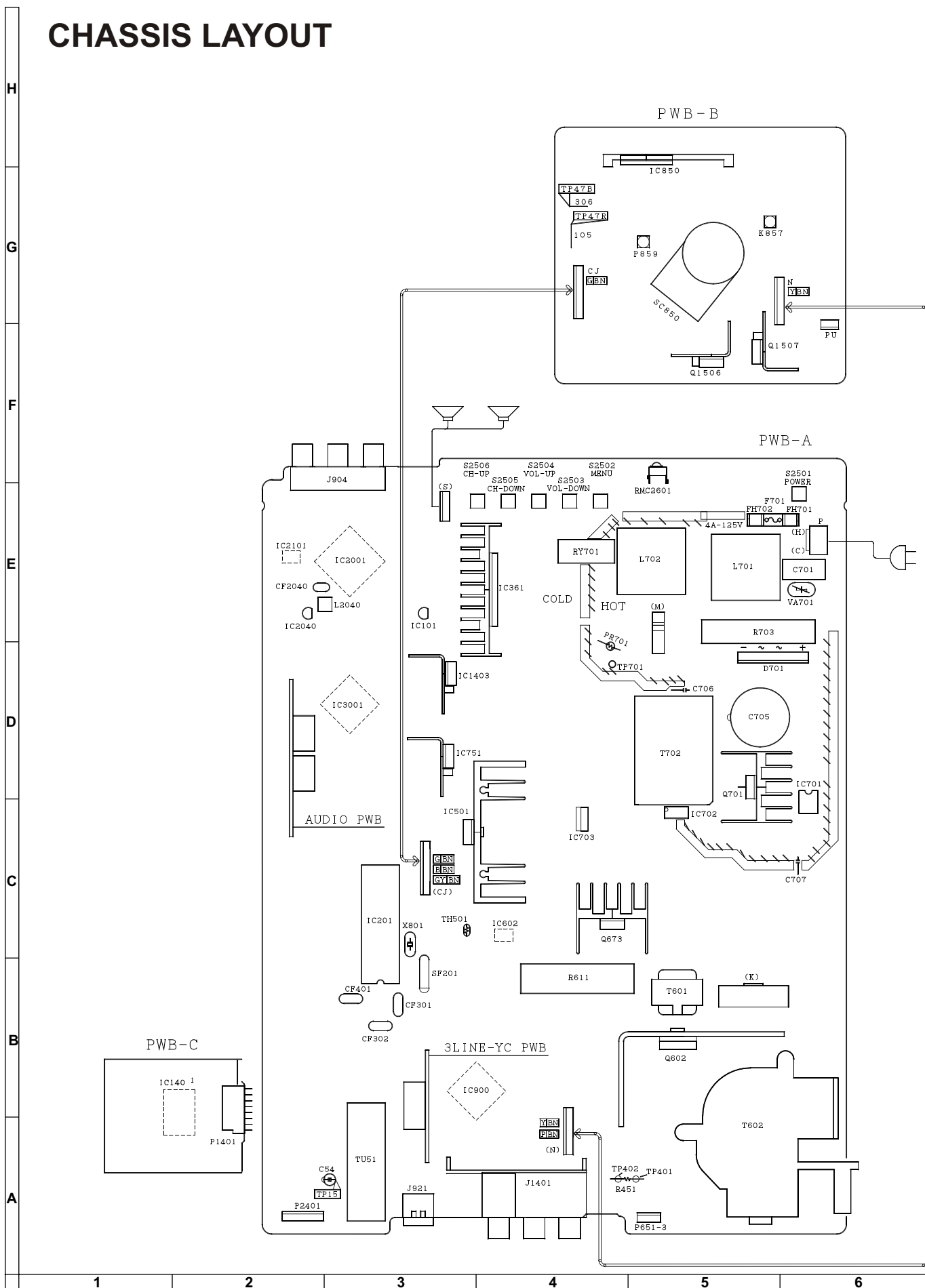
Check the output of the speaker at the maximum volume as stated below.

Confirmation spec:

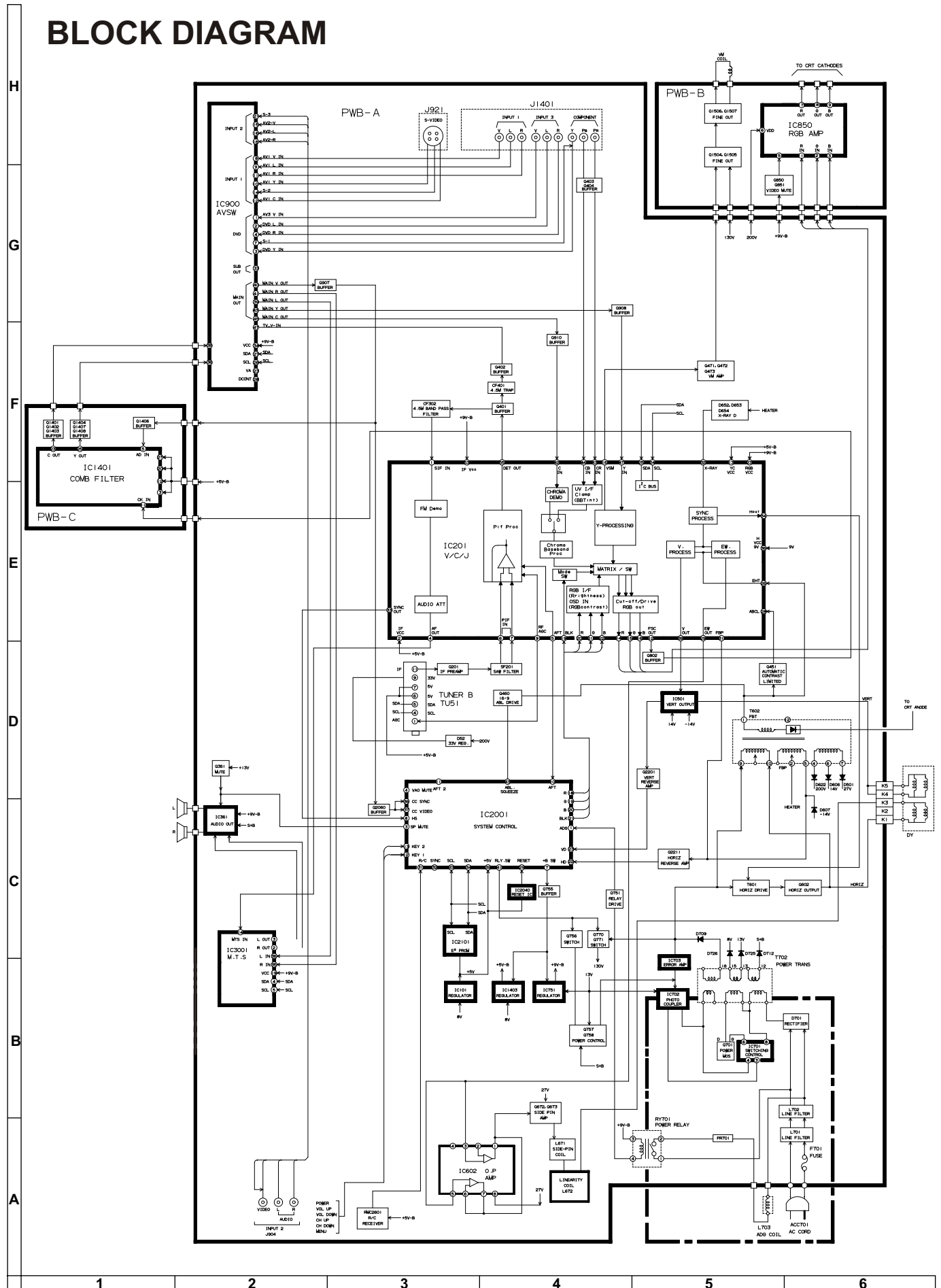
ADJ spec: above 25 dB

CHK spec: above 20 dB

CHASSIS LAYOUT

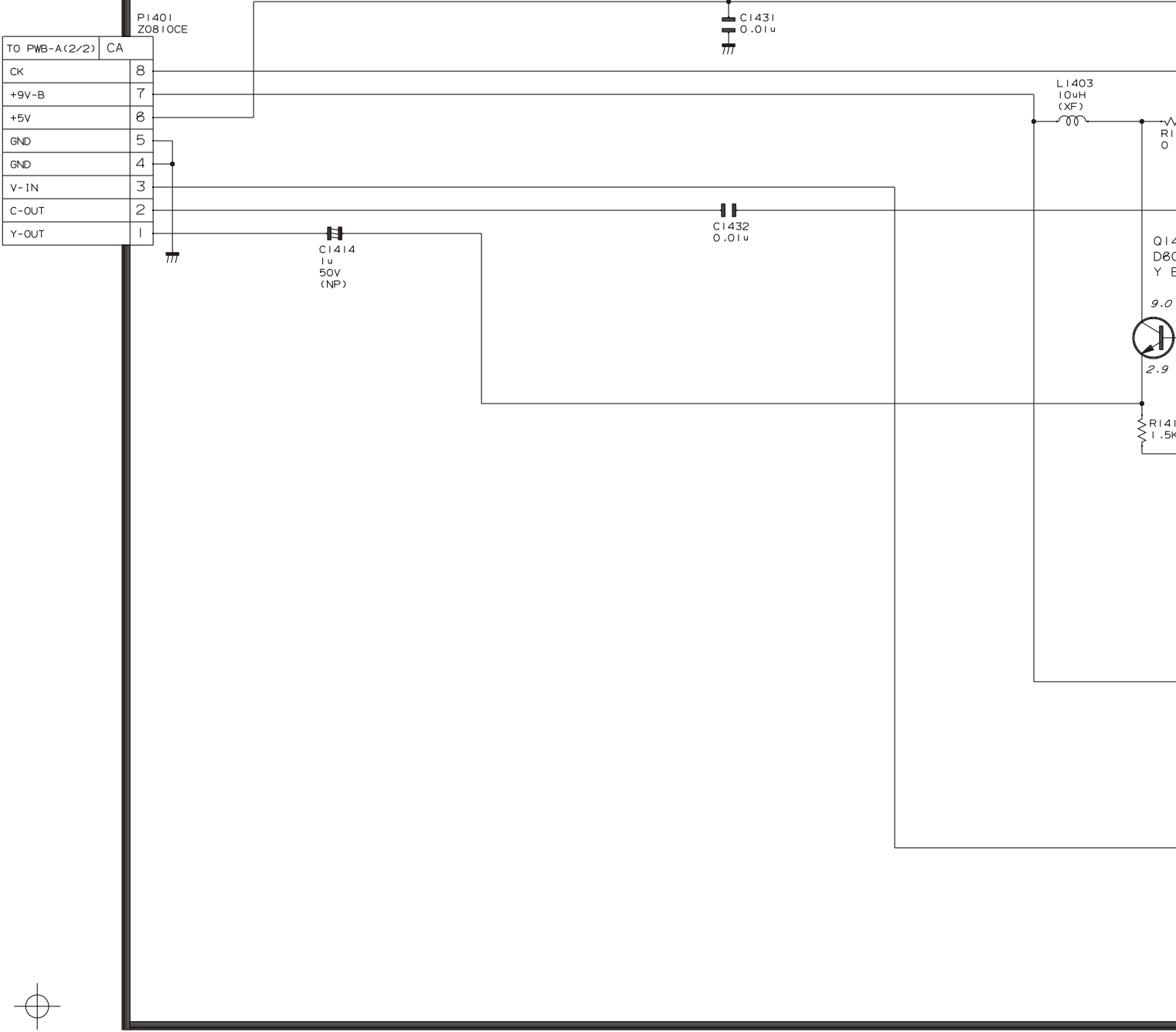


BLOCK DIAGRAM



2-LINE Y/C

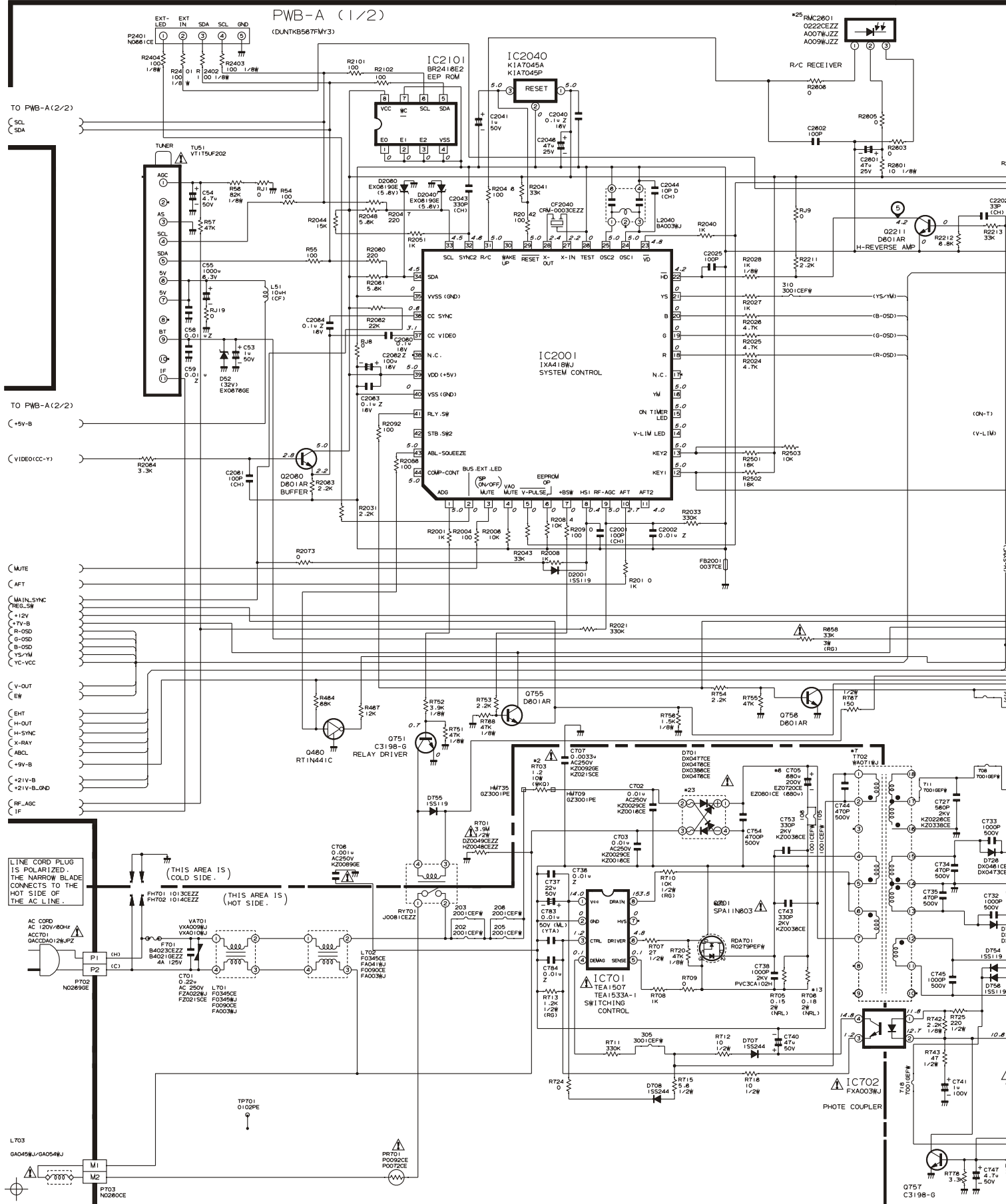
⚠ AND SHADED () = SAFETY RELAT
▲ MARK = X-RAY RELAT



NOTE: 1. THE UNIT OF RESISTANCE "OHM" IS OMITTED
(K=1000 OHMS, M=MEGAOHM).
2. ALL RESISTORS ARE 1/16 WATT, UNLESS OTHERWISE NOTED.
3. UNIT OF ALL CAPACITORS ARE F WITH PREFIX SYMBOL
(u, P, ETC).



MAIN I

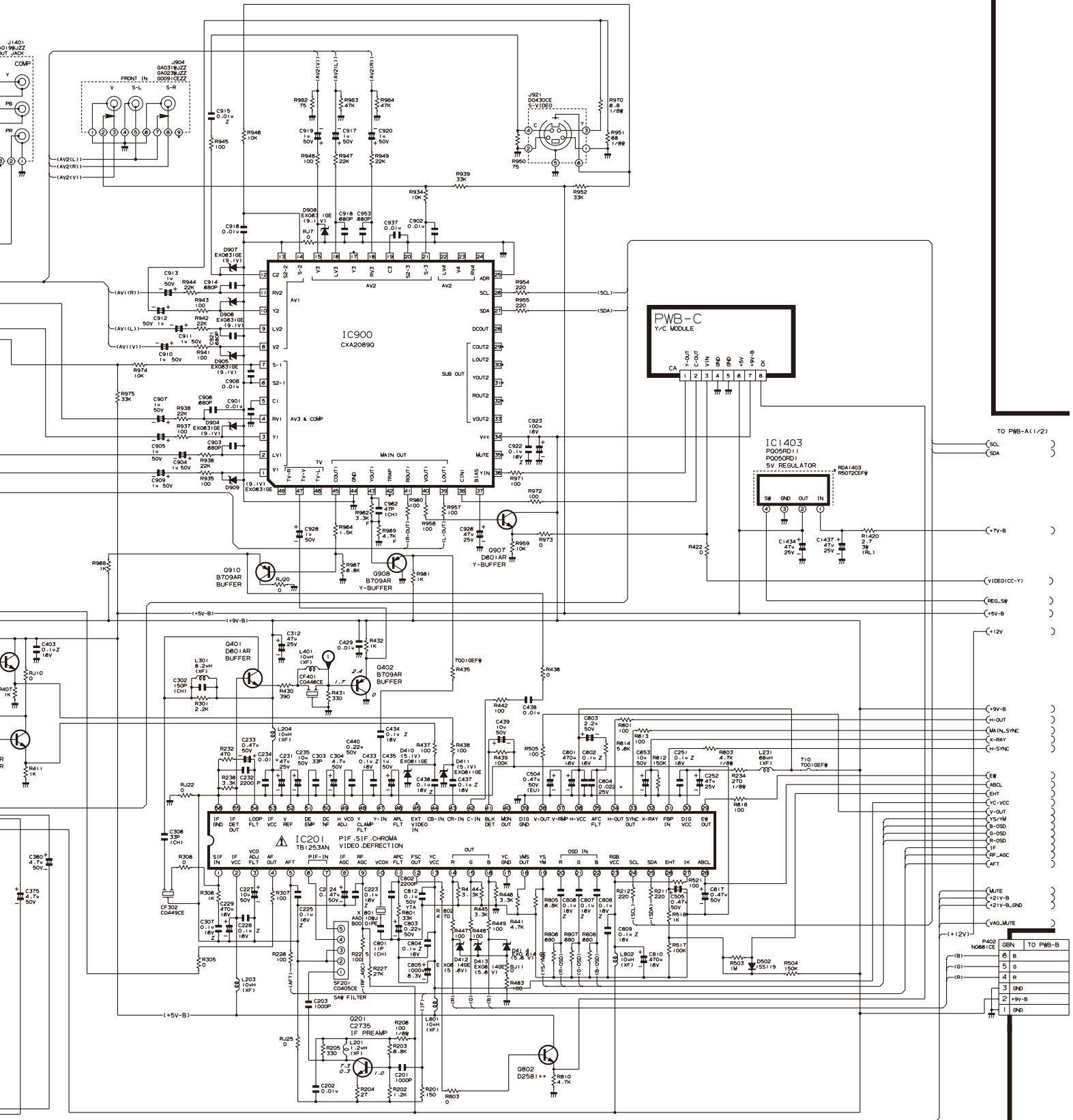


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GERMANY	100	100
ITALY	100	100
NETHERLANDS	100	100
SPAIN	100	100
UNITED KINGDOM	100	100
USSR	100	100
CHINA	100	100
INDIA	100	100
PAKISTAN	100	100
BANGLADESH	100	100
AFGHANISTAN	100	100
IRAN	100	100
IRAQ	100	100
SYRIA	100	100
LEBANON	100	100
JORDAN	100	100
ISRAEL	100	100
YEMEN	100	100
OMAN	100	100
Saudi Arabia	100	100
QATAR	100	100
UAE	100	100
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Israel	100</	

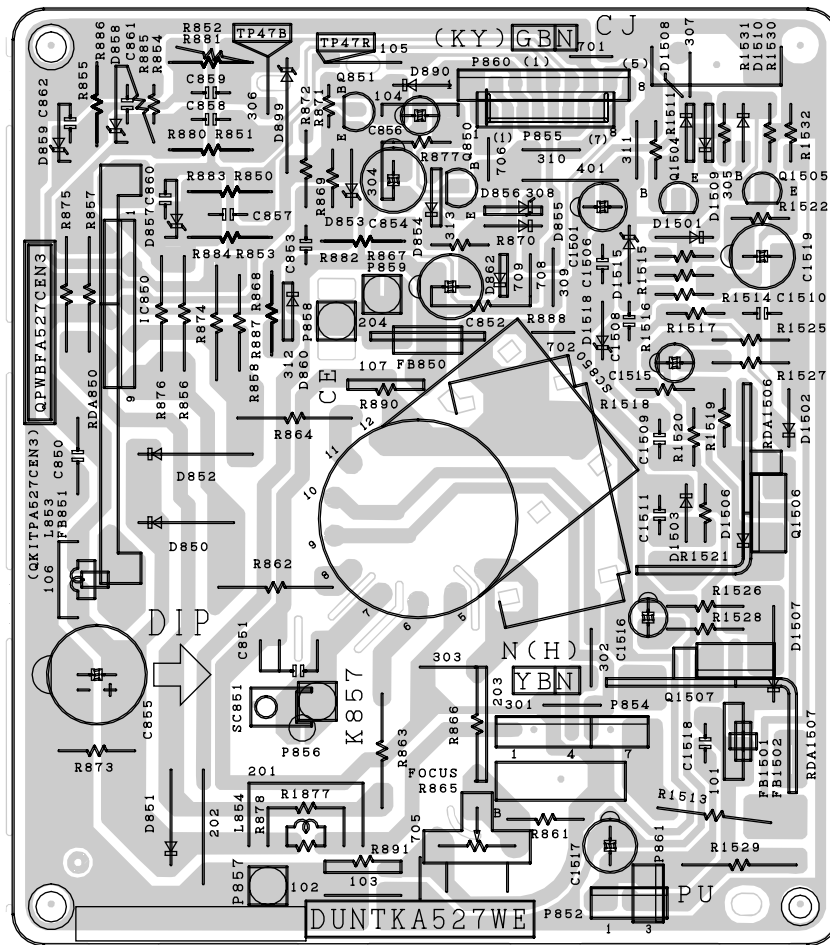


▲ AND SHADED: ■ COMPONENTS
= SAFETY RELATED PARTS.
▲ MARK = X-RAY RELATED PARTS.

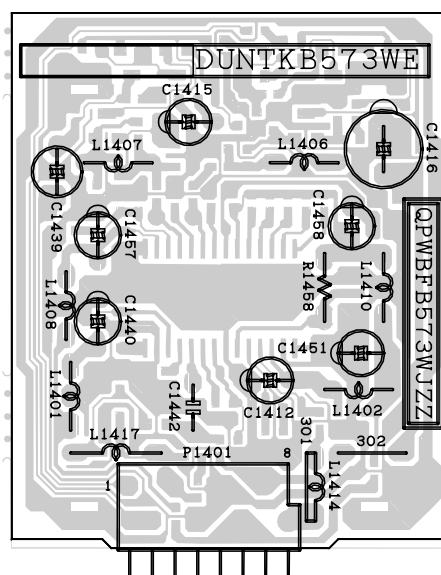
NOTE: 1. THE UNIT OF RESISTANCE "OHM" IS OMITTED.
(K=1000 OHMS, M=MEGAOHM).
2. ALL RESISTORS ARE 1/8 WATT UNLESS OTHERWISE NOTED.
3. UNIT OF ALL CAPACITORS ARE P WITH PREFIX SYMBOL
(u, P, ETC).



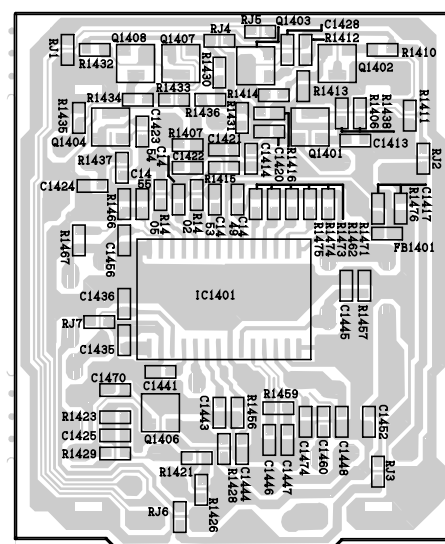
PRINTED WIRING BOARD ASSEMBLIES



PWB-B: CRT Unit (Wiring Side)



PWB-C: 3-LINE Y/C Unit (Wiring Side)



PWB-C: 3-LINE Y/C Unit (Chip Parts Side)



PARTS LIST

PARTS REPLACEMENT

Replacement parts which have these special safety characteristics identified in this manual ; electrical components having such features are identified by  and shaded areas in the Replacement Parts Lists and Schematic Diagrams. The use of a substitute replacement part which does not have the same safety characteristic as the factory recommended replacement parts shown in this service manual may create shock, fire or other hazards.

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following informations.

- | | |
|-----------------|----------------|
| 1. MODEL NUMBER | 2. REF. NO. |
| 3. PART NO. | 4. DESCRIPTION |

in **USA**: Contact your nearest SHARP Parts Distributor to order. For location of SHARP Parts Distributor, Please call Toll-Free; 1-800-BE-SHARP

★ MARK: SPARE PARTS-DELIVERY SECTION

▲ MARK: X-RAY RELATED PARTS

Ref. No.	Part No.	★	Description	Code
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PICTURE TUBE

	VB80JUA061X1E	X	Picture Tube (32C230/231)	CN
 L703	RCiLGA045WJZZ	X	Degaussing Coil	AN
	QEARC3102MEZZ	X	Ground-Part	AD

PRINTED WIRING BOARD ASSEMBLIES (NOT REPLACEMENT ITEM)

PWB-A DUNTKB567WEY3	—	MAIN Unit	—
PWB-B DUNTKB568WEV1	—	CRT Unit	—
PWB-D DUNTKB572WEV0	—	2LINE Y/C Unit	—

Ref. No.	Part No.	★	Description	Code
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PWB-A: DUNTKB567WEY3 MAIN UNIT

TUNER

NOTE: THE PARTS HERES SHOWN ARE SUPPLIED AS AN ASSEMBLY BUT NOT INDEPENDENTLY.

 TU51	VTUVT1T5UF202	X	VHF Tuner	AR
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INTEGRATED CIRCUITS

IC101	VHiPQ050ES1-1+	X	PQ050ES1MXP	AB
▲  IC201	VHiTB1253AN-1	X	TB1253AN	AP
 IC361	VHiAN5277/-1	X	AN5277	AG
 IC501	VHiTDA8177+-1	X	TDA8177	AE
IC602	VHiBA15218F2E*	X	BA15218F-E2	AB
 IC701	VHiTEA1507/-1	X	TEA1507P/N1	AE
 IC702	RH-FXA003WJZZ	X	PC123Y82	AB
▲  IC703	VHiSE125N++-F	X	I.C.	
IC751	VHiPQ09RD11-1	X	PQ09RD11	AD
IC900	VHiCXA2089Q-2Y	X	CXA2089Q-6T	AK
IC1403	VHiPQ05RD11-1	X	PQ05RD11	AD
IC2001	RH-iXA418WJZZQ	X	TMP88CS38BFG	AN
IC2040	VHiKiA7045A-1+	X	KIA7045AP	AB
IC2101	VHiBR2416E2-1*	X	BR24C16F	AD
IC3001	VHiCXA2074Q-1*	X	CXA2074Q	AP

TRANSISTORS

Q201	VS2SC2735//1E*	X	2SC2735	AB
Q361	VS2SB709AR/-1*	X	2SB709AR	AA
Q401	VS2SD601AR/-1*	X	2SD601AR	AA
Q402	VS2SB709AR/-1*	X	2SB709AR	AA
Q403	VS2SD601AR/-1*	X	2SD601AR	AA
Q404	VS2SD601AR/-1*	X	2SD601AR	AA
Q451	VS2SA1266-Y-1+	X	2SA1266-Y	AB
Q460	VSRT1N441C/-1*	X	RT1N441C	AB
Q601	VS2SC2482//1+	X	2SC2482	AB
 Q602	VS2SD2646++1E	X	2SD2646++	AG
Q672	VS2SA1266-Y-1+	X	2SA1266-Y	AB
Q673	VS2SD1830//1E	X	2SD1830	AD
 Q701	VSSPA11N603-1	X	SPA11N603	AK
Q751	VS2SC3198-G-1+	X	2SC3198-G	AB
Q755	VS2SD601AR/-1*	X	2SD601AR	AA
Q756	VS2SD601AR/-1*	X	2SD601AR	AA
Q757	VS2SC3198-G-1+	X	2SC3198-G	AB
Q758	VS2SA1266-Y-1+	X	2SA1266-Y	AB
Q802	VS2SD601AR/-1*	X	2SD601AR	AA
Q907	VS2SD601AR/-1*	X	2SD601AR	AA
Q908	VS2SB709AR/-1*	X	2SB709AR	AA
Q910	VS2SB709AR/-1*	X	2SB709AR	AA
Q2060	VS2SD601AR/-1*	X	2SD601AR	AA
Q2201	VS2SD601AR/-1*	X	2SD601AR	AA
Q2211	VS2SD601AR/-1*	X	2SD601AR	AA

DIODES

D52	RH-EX0676GEZZ*	X	Zener Diode, 32V	AB
D103	RH-DX0441CEZZ*	X	DX0441CE	AA
D361	VHD1SS119//1*	X	1SS119	AA
D362	VHD1SS119//1*	X	1SS119	AA
D410	RH-EX0611GEZZ*	X	Zener Diode, 5.1V	AB
D411	RH-EX0611GEZZ*	X	Zener Diode, 5.1V	AB
D412	RH-EX0614GEZZ*	X	Zener Diode, 5.6V	AB
D413	RH-EX0614GEZZ*	X	Zener Diode, 5.6V	AB
D414	RH-EX0614GEZZ*	X	Zener Diode, 5.6V	AB
D454	RH-EX0628GEZZ*	X	Zener Diode, 8.2V	AB
D455	VHD1SS119//1*	X	1SS119	AA
D501	RH-DX0302CEZZ*	X	DX0302CE	AB
D502	VHD1SS119//1*	X	1SS119	AA

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code	
PWB-A: DUNTKB567WEY3					C54	VCEA0A1HW475M+X	4.7	50V	Electrolytic AA	
MAIN UNIT(Continued)					C55	VCEA0A0JW108M+ X	1000	6.3V	Electrolytic AB	
	D510	RH-DX0441CEZZ*	X	DX0441CE	AA	C58	VCKYCY1HF103Z* X	0.01	50V	Ceramic AA
△	D605	RH-DX0255CEZZ	X	DX0255CE	AD	C59	VCKYPA1HF103Z+ X	0.01	50V	Ceramic AA
△	D606	RH-DX0302CEZZ*	X	DX0302CE	AB	C101	VCEA0A0JW108M+ X	1000	6.3V	Electrolytic AB
	D607	RH-DX0471CEZZ*	X	DX0471CE	AB	C103	VCEA0A1CW108M+X	1000	16V	Electrolytic AB
	D621	RH-EX0631GEZZ*	X	Zener Diode, 9.1V	AB	C201	VCKYCY1HB102K* X	1000p	50V	Ceramic AA
△	D622	RH-DX0131CEZZ*	X	DX0131CE	AB	C202	VCKYCY1HB103K* X	0.01	50V	Ceramic AA
▲△	D651	VHD1SS244//1*	X	1SS244	AA	C203	VCKYCY1HB102K* X	1000p	50V	Ceramic AA
▲△	D652	RH-EX0641GEZZ*	X	Zener Diode, 12V	AB	C223	VCKYCY1CF104Z* X	0.1	16V	Ceramic AA
▲△	D653	VHD1SS119//1*	X	1SS119	AA	C224	VCEA0A1HW474M+X	0.47	50V	Electrolytic AA
▲△	D654	VHD1SS119//1*	X	1SS119	AA	C225	VCKYCY1CF104Z* X	0.1	16V	Ceramic AA
△	D673	RH-DXA006WJZZ	X	DXA006WJ	AB	C227	VCEA0A1HW106M+X	10	50V	Electrolytic AA
△	D701	RH-DX0477CEZZ	X	DX0477CE	AE	C228	VCKYCY1CF104Z* X	0.1	16V	Ceramic AA
	D707	VHD1SS244//1*	X	1SS244	AA	C229	VCEA0A1CW477M+X	470	16V	Electrolytic AB
	D708	VHD1SS244//1*	X	1SS244	AA	C231	VCEA0A1EW476M+X	47	25V	Electrolytic AA
△	D709	RH-DXA006WJZZ	X	DXA006WJ	AB	C232	VCKYCY1HB222K* X	2200p	50V	Ceramic AA
	D712	RH-DX0468CEZZ	X	DX0468CE	AB	C233	VCEA0A1HW474M+X	0.47	50V	Electrolytic AA
	D725	RH-DX0302CEZZ*	X	DX0302CE	AB	C234	VCKYCY1HB103K* X	0.01	50V	Ceramic AA
	D726	RH-DX0461CEZZ	X	DX0461CE	AB	C235	VCEA0A1HW106M+X	10	50V	Electrolytic AA
	D751	VHD1SS119//1*	X	1SS119	AA	C251	VCKYCY1CF104Z* X	0.1	16V	Ceramic AA
	D752	VHD1SS119//1*	X	1SS119	AA	C252	VCEA0A1EW476M+X	47	25V	Electrolytic AA
	D753	VHD1SS119//1*	X	1SS119	AA	C302	VCCCCY1HH151J* X	150p	50V	Ceramic AA
	D754	VHD1SS119//1*	X	1SS119	AA	C303	VCCCCY1HH330J* X	33p	50V	Ceramic AA
	D755	VHD1SS119//1*	X	1SS119	AA	C304	VCEA0A1HW475M+X	4.7	50V	Electrolytic AA
	D756	VHD1SS119//1*	X	1SS119	AA	C306	VCCCCY1HH330J* X	33p	50V	Ceramic AA
	D757	RH-EX0619GEZZ*	X	Zener Diode, 6.2V	AB	C307	VCKYCY1CF104Z* X	0.1	16V	Ceramic AA
	D904	RH-EX0631GEZZ*	X	Zener Diode, 9.1V	AB	C312	VCEA0A1EW476M+X	47	25V	Electrolytic AA
	D905	RH-EX0631GEZZ*	X	Zener Diode, 9.1V	AB	C360	VCEA0A1HW475M+X	4.7	50V	Electrolytic AA
	D906	RH-EX0631GEZZ*	X	Zener Diode, 9.1V	AB	C361	VCEA0A1HW105M+X	1	50V	Electrolytic AA
	D907	RH-EX0631GEZZ*	X	Zener Diode, 9.1V	AB	C362	VCKYCY1EB223K* X	0.022	25V	Ceramic AA
	D908	RH-EX0631GEZZ*	X	Zener Diode, 9.1V	AB	C363	VCKYCY1EB223K* X	0.022	25V	Ceramic AA
	D909	RH-EX0631GEZZ*	X	Zener Diode, 9.1V	AB	C364	VCEA0A1EW227M+X	220	25V	Electrolytic AB
	D2001	VHD1SS119//1*	X	1SS119	AA	C365	VCEA0A1HW105M+X	1	50V	Electrolytic AA
	D2040	RH-EX0619GEZZ*	X	Zener Diode, 6.2V	AB	C366	VCEA0A1HW106M+X	10	50V	Electrolytic AA
	D2060	RH-EX0619GEZZ*	X	Zener Diode, 6.2V	AB	C367	VCEA0A1VW108M+X	1000	35V	Electrolytic AB
PACKAGED CIRCUITS					C368	VCKYPA1HF103Z+ X	0.01	50V	Ceramic AA	
	TH501	RH-HZ0004GEZZ+	X	Thermistor	AB	C369	VCEA0A1CW227M+X	220	16V	Electrolytic AB
△	VA701	RH-VXA009WJZZ	X	Varistor	AB	C370	VCEA0A1CW227M+X	220	16V	Electrolytic AB
△	PR701	RMPTP0092CEZZ	X	Packaged Circuit	AD	C371	VCEA0A1EW108M+X	1000	25V	Electrolytic AB
	X801	RCRSAA010WJZZ	X	Crystal	AC	C372	VCEA0A1EW108M+X	1000	25V	Electrolytic AB
FILTERS					C373	VCKYCY1HB103K* X	0.01	50V	Ceramic AA	
	CF302	RFILC0449CEZZ+	X	Filter	AB	C375	VCEA0A1HW475M+X	4.7	50V	Electrolytic AA
	CF401	RFILC0446CEZZ+	X	Filter	AB	C401	VCEA0A1HW106M+X	10	50V	Electrolytic AA
	SF201	RFILC0405CEZZ	X	Filter	AD	C402	VCEA0A1HW106M+X	10	50V	Electrolytic AA
COILS					C403	VCKYCY1CF104Z* X	0.1	16V	Ceramic AA	
	L51	VP-CF100K0000*	X	Peaking, 10μH	AB	C429	VCKYCY1HB103K* X	0.01	50V	Ceramic AA
	L201	VP-XF1R2K0000*	X	Peaking, 1.2μH		C433	VCKYCY1CF104Z* X	0.1	16V	Ceramic AA
	L203	VP-XF100K0000*	X	Peaking, 10μH		C434	VCKYCY1CF104Z* X	0.1	16V	Ceramic AA
	L204	VP-XF100K0000*	X	Peaking, 10μH	AA	C435	VCEA0A1HW105M+X	1	50V	Electrolytic AA
	L231	VP-XF680K0000*	X	Peaking, 68μH	AA	C436	VCKYCY1CF104Z* X	0.1	16V	Ceramic AA
	L301	VP-XF8R2K0000*	X	Peaking, 8.2μH	AA	C437	VCKYCY1CF104Z* X	0.1	16V	Ceramic AA
	L401	VP-XF100K0000*	X	Peaking, 10μH	AA	C438	VCKYCY1HB103K* X	0.01	50V	Ceramic AA
	L671	RCILZ1005CEZZ	X	Coil	AD	C439	VCEA0A1HW106M+X	10	50V	Electrolytic AA
	L672	RCILZ1027CEZZ	X	Coil	AD	C440	VCIFYA1HA224J+ X	0.22	50V	Mylar AB
	L701	RCILF0345CEZZ	X	Coil	AD	C451	VCQYTA2AA104K+ X	0.1	100V	Mylar AB
	L702	RCILF0345CEZZ	X	Coil	AD	C452	VCEA0A1EW336M+X	33	25V	Electrolytic AA
	L705	RCILP0179CEZZ+	X	Coil	AB	C501	VCKYPA2HB102K+ X	1000p	500V	Ceramic AB
	L728	RCILP0179CEZZ+	X	Coil	AB	C502	VCEA0A1VW477M+X	470	35V	Electrolytic AB
	L729	RCILP0179CEZZ+	X	Coil	AB	C504	VCEACA1HC474M+X	0.47	50V	Electrolytic AB
	L801	VP-XF100K0000*	X	Peaking, 10μH	AA	C505	VCEA0A1HW474M+X	0.47	50V	Electrolytic AA
	L802	VP-XF100K0000*	X	Peaking, 10μH	AA	C506	VCKYCY1HB103K* X	0.01	50V	Ceramic AA
	L2040	RCILBA003WJZZ	X	Oscillation Coil	AB	C507	VCKYCY1HB103K* X	0.01	50V	Ceramic AA
TRANSFORMERS					C510	RC-FZ0272CEZZ+ X	0.39	100V	Mylar AB	
△	T601	RTRNZ0057PEZZ	X	Transformer	AD	C512	VCEA0A1EW476M+X	47	25V	Electrolytic AA
▲△	T602	RTRNFA038WJZZ	X	H-Volt Transformer	AU	C514	VCEA0A1VW107M+X	100	35V	Electrolytic AB
△	T702	RTRNWA071WJZZ	X	Transformer	AG	C516	VCKYCY1HB472K* X	4700p	50V	Ceramic AA
CAPACITORS					C518	VCQYTA2AA473J+ X	0.047	100V	Mylar AB	
	C53	VCEA0A1HW105M+X	1	50V Electrolytic	AA	C522	VCIFYA1HA334J+ X	0.33	50V	Mylar AB
						C523	VCEA0A1HW105M+X	1	50V	Electrolytic AA
						C601	VCEA0A1CW477M+X	470	16V	Electrolytic AB
						C602	VCKYCY1CF104Z* X	0.1	16V	Ceramic AA
						C603	VCEA0A1HW225M+X	2.2	50V	Electrolytic AA
						C604	VCKYCY1EB223K* X	0.022	25V	Ceramic AA
						C606	VCKYPA2HB561K+ X	560p	500V	Ceramic AB

Ref. No.	Part No.	★	Description	Code
PWB-A: DUNTKB567WEY3				
MAIN UNIT(Continued)				
C607	VCKYPA1HB472K+ X		4700p 50V Ceramic	AA
C608	RC-KZ0033CEZZ X		150p 2kV Ceramic	AB
▲△ C609	VCFPVC3ZA203H X		0.02 1800V	AB
Metalized Polypro Film				
C611	VCEA0A1EW477M+X		470 25V Electrolytic	AB
C614	VCEA0A1EW108M+X		1000 25V Electrolytic	AB
C615	VCFYSB2EB823J X		0.082 250V Mylar	AB
C616	VCKYPA2HB471K+ X		470p 500V Ceramic	AB
C617	VCEA0A1HW474M+X		0.47 50V Electrolytic	AA
C622	VCKYPA2HB102K+ X		1000p 500V Ceramic	AB
C623	VCEA4A2EN106M+ X		10 250V Electrolytic	AB
C652	VCEA0A1HW476M+X		47 50V Electrolytic	AB
C653	VCEA0A1HW106M+X		10 50V Electrolytic	AA
C674	VCKYCY1HB391K* X		390p 50V Ceramic	AA
C675	VCEA0A1HW106M+X		10 50V Electrolytic	AA
C677	RC-FZ0377CEZZ X		4.7 50V	AD
▲△ C678	VQPPC2GB563J X		0.056 400V	AB
C681	VCFPFA2EB684J X		0.68 250V	AB
Metalized Polypro Film				
C682	VCKYPA2HB102K+ X		1000p 500V Ceramic	AB
C685	VQYTA1HM333J+ X		0.033 50V Mylar	AA
△ C701	RC-FZA022WJZZ X		0.22 AC250V Mylar	AB
C702	RC-KZ0029CEZZ+ X		0.01 AC250V Ceramic	AB
C703	RC-KZ0029CEZZ+ X		0.01 AC250V Ceramic	AB
△ C705	RC-EZ0720CEZZ X		680 200V Electrolytic	AG
△ C706	RC-KZ0089GEZZA X		0.001 AC250V Ceramic	AB
△ C707	RC-KZ0092GEZZA X		0.0033 AC250V Ceramic	AB
△ C723	RC-EZ0724CEZZ X		100 160V Electrolytic	AC
△ C725	RC-EZA065WJZZ X		330 160V Electrolytic	AE
C726	RC-KZ0226CEZZ+ X		560p 2kV Ceramic	AB
C727	RC-KZ0226CEZZ+ X		560p 2kV Ceramic	AB
C729	VCEA0A1HW106M+X		10 50V Electrolytic	AA
C730	VCEA0A1VW108M+X		1000 35V Electrolytic	AB
C731	RC-EZ0385CEZZ+ X		1000 16V Electrolytic	AB
C732	VCKYPA2HB102K+ X		1000p 500V Ceramic	AB
C733	VCKYPA2HB102K+ X		1000p 500V Ceramic	AB
C734	VCKYPA2HB471K+ X		470p 500V Ceramic	AB
C735	VCKYPA2HB471K+ X		470p 500V Ceramic	AB
C736	VCKYCY1HF103Z* X		0.01 50V Ceramic	AA
C737	VCEA0A1HW226M+X		22 50V Electrolytic	AA
C738	VCFPVC3CA102H X		1000p 1600V	AB
Metalized Polypro Film				
C739	RC-EZ0385CEZZ+ X		1000 16V Electrolytic	AB
C740	VCEA0A1HW476M+ X		47 50V Electrolytic	AB
C741	VCEA4A2AN105M+ X		1 100V Electrolytic	AA
C743	RC-KZ0036CEZZ+ X		330p 2kV Ceramic	AB
C744	VCKYPA2HB471K+ X		470p 500V Ceramic	AB
C745	VCKYPA2HB102K+ X		1000p 500V Ceramic	AB
C746	VCKYPA2HB102K+ X		1000p 500V Ceramic	AB
C747	VCEA0A1HW475M+X		4.7 50V Electrolytic	AA
C749	VCEA0A1HW105M+X		1 50V Electrolytic	AA
C753	RC-KZ0036CEZZ+ X		330p 2kV Ceramic	AB
C754	VCKYPA2HB472K+ X		4700p 500V Ceramic	AB
C755	VCEA0A1EW476M+X		47 25V Electrolytic	AA
C783	VQYTA1HM103J+ X		0.01 50V Mylar	AA
C784	VCKYCY1HF103Z* X		0.01 50V Ceramic	AA
C801	VCCCCY1HH110J* X		11p 50V Ceramic	AA
C802	VCKYCY1HB222K* X		2200p 50V Ceramic	AA
C803	VCEA0A1HW224M+X		0.22 50V Electrolytic	AA
C804	VCKYCY1CF104Z* X		0.1 16V Ceramic	AA
C805	VCEA0A0JW108M+ X		1000 6.3V Electrolytic	AB
C806	VCKYCY1CF104Z* X		0.1 16V Ceramic	AA
C807	VCKYCY1CF104Z* X		0.1 16V Ceramic	AA
C808	VCKYCY1CF104Z* X		0.1 16V Ceramic	AA
C809	VCKYCY1CF104Z* X		0.1 16V Ceramic	AA
C810	VCEA0A1CW477M+X		470 16V Electrolytic	AB
C812	VQYTA1HM104J+ X		0.1 50V Mylar	AB
C901	VCKYCY1HB103K* X		0.01 50V Ceramic	AA
C902	VCKYCY1HB103K* X		0.01 50V Ceramic	AA
C903	VCKYCY1HB681K* X		680p 50V Ceramic	AA
C904	VCEA0A1HW105M+X		1 50V Electrolytic	AA
C905	VCEA0A1HW105M+X		1 50V Electrolytic	AA

Ref. No.	Part No.	★	Description	Code
C906	VCKYCY1HB681K* X		680p 50V Ceramic	AA
C907	VCEA0A1HW105M+X		1 50V Electrolytic	AA
C908	VCKYCY1HB103K* X		0.01 50V Ceramic	AA
C909	VCEA0A1HW105M+X		1 50V Electrolytic	AA
C910	VCEA0A1HW105M+X		1 50V Electrolytic	AA
C911	VCEA0A1HW105M+X		1 50V Electrolytic	AA
C912	VCEA0A1HW105M+X		1 50V Electrolytic	AA
C913	VCEA0A1HW105M+X		1 50V Electrolytic	AA
C914	VCKYCY1HB681K* X		680p 50V Ceramic	AA
C915	VCKYPA1HF103Z+ X		0.01 50V Ceramic	AA
C916	VCKYCY1HB103K* X		0.01 50V Ceramic	AA
C917	VCEA0A1HW105M+X		1 50V Electrolytic	AA
C918	VCKYCY1HB681K* X		680p 50V Ceramic	AA
C919	VCEA0A1HW105M+X		1 50V Electrolytic	AA
C920	VCEA0A1HW105M+X		1 50V Electrolytic	AA
C921	VCKYCY1HB681K* X		680p 50V Ceramic	AA
C922	VCKYCY1CF104Z* X		0.1 16V Ceramic	AA
C923	VCEA0A1CW107M+X		100 16V Electrolytic	AA
C926	VCEA0A1EW476M+X		47 25V Electrolytic	AA
C928	VCEA0A1HW105M+X		1 50V Electrolytic	AA
C937	VCKYCY1HB103K* X		0.01 50V Ceramic	AA
C953	VCKYCY1HB681K* X		680p 50V Ceramic	AA
C962	VCCCCY1HH470J* X		47p 50V Ceramic	AA
C1434	VCEA0A1EW476M+X		47 25V Electrolytic	AA
C1437	VCEA0A1EW476M+X		47 25V Electrolytic	AA
C2001	VCCCCY1HH101J* X		100p 50V Ceramic	AA
C2002	VCKYCY1HF103Z* X		0.01 50V Ceramic	AA
C2025	VCCCCY1HH101J* X		100p 50V Ceramic	AA
C2040	VCKYCY1CF104Z* X		0.1 16V Ceramic	AA
C2041	VCEA0A1HW105M+X		1 50V Electrolytic	AA
C2043	VCCCCY1HH331J* X		330p 50V Ceramic	AA
C2044	VCCCCY1HH100D* X		10p 50V Ceramic	AA
C2046	VCEA0A1EW476M+X		47 25V Electrolytic	AA
C2060	VCKYCY1CF104Z* X		0.1 16V Ceramic	AA
C2061	VCCCCY1HH101J* X		100p 50V Ceramic	AA
C2062	VCEA0A1CW107M+X		100 16V Electrolytic	AA
C2063	VCKYCY1CF104Z* X		0.1 16V Ceramic	AA
C2064	VCKYCY1CF104Z* X		0.1 16V Ceramic	AA
C2201	VCKYCY1HB681K* X		680p 50V Ceramic	AA
C2202	VCCCCY1HH330J* X		33p 50V Ceramic	AA
C2601	VCEA0A1EW476M+X		47 25V Electrolytic	AA
C2602	VCCCCY1HH101J* X		100p 50V Ceramic	AA
C3001	VCEA0A1HW475M+X		4.7 50V Electrolytic	AA
C3002	VCKYCY1HB562K* X		5600p 50V Ceramic	AA
C3003	VCKYCY1EB123K* X		0.012 25V Ceramic	AA
C3004	VCEA0A1HW105M+X		1 50V Electrolytic	AA
C3005	VCEA0A1HW475M+X		4.7 50V Electrolytic	AA
C3006	VCEA0A1HW106M+X		10 50V Electrolytic	AA
C3007	VCEA0A1HW475M+X		4.7 50V Electrolytic	AA
C3008	VCKYCY1CF104Z* X		0.1 16V Ceramic	AA
C3009	VCEA0A1CW477M+X		470 16V Electrolytic	AB
C3010	VCE9GA1HW475M+X		4.7 50V Electrolytic	AB
C3011	VCEA0A1HW475M+X		4.7 50V Electrolytic	AA
C3012	VCEA0A1HW475M+X		4.7 50V Electrolytic	AA
C3013	VCKYCY1HB272K* X		2700p 50V Ceramic	AA
C3014	VCKYCY1CB473K* X		0.047 16V Ceramic	AA
C3015	VCEACA1HC335K+ X		3.3 50V Electrolytic	AB
C3016	VCE9GA1HW475M+X		4.7 50V Electrolytic	AB
C3017	VCEACA1CC106K+ X		10 16V Electrolytic	AB
C3018	VCEA0A1HW105M+X		1 50V Electrolytic	AA
C3021	VCEA0A1HW475M+X		4.7 50V Electrolytic	AA
C3022	VCEA0A1HW475M+X		4.7 50V Electrolytic	AA
C3025	VCKYCY1CB473K* X		0.047 16V Ceramic	AA
C3027	VCKYCY1CB473K* X		0.047 16V Ceramic	AA
C3028	VCKYCY1HB682K* X		6800p 50V Ceramic	AA
C3029	VCKYCY1HB682K* X		6800p 50V Ceramic	AA

Ref. No.	Part No.	★	Description	Code
PWB-A: DUNTKB567WEY3				
MAIN UNIT(Continued)				

RESISTORS

RJ1	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
RJ1	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
RJ7	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
RJ7	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
RJ8	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
RJ8	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
RJ9	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
RJ9	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
RJ10	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
RJ11	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
RJ11	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
RJ12	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
RJ12	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
RJ13	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
RJ13	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
RJ14	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
RJ14	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
RJ15	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
RJ15	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
RJ16	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
RJ19	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
RJ20	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
RJ22	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
RJ23	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
RJ25	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
R54	VRS-CY1JF101J*	X 100	1/16W	Metal Oxide	AA
R55	VRS-CY1JF101J*	X 100	1/16W	Metal Oxide	AA
R56	VRD-RA2BE823J*	X 82k	1/8W	Carbon	AA
R57	VRS-CY1JF473J*	X 47k	1/16W	Metal Oxide	AA
R201	VRS-CY1JF151J*	X 150	1/16W	Metal Oxide	AA
R202	VRS-CY1JF122J*	X 1.2k	1/16W	Metal Oxide	AA
R203	VRS-CY1JF682J*	X 6.8k	1/16W	Metal Oxide	AA
R204	VRS-CY1JF270J*	X 27	1/16W	Metal Oxide	AA
R205	VRS-CY1JF000J*	X 330	1/16W	Metal Oxide	AA
R206	VRD-RA2BE101J*	X 100	1/8W	Carbon	AA
R211	VRS-CY1JF221J*	X 220	1/16W	Metal Oxide	AA
R212	VRS-CY1JF221J*	X 220	1/16W	Metal Oxide	AA
R225	VRS-CY1JF101J*	X 100	1/16W	Metal Oxide	AA
R226	VRS-CY1JF101J*	X 100	1/16W	Metal Oxide	AA
R227	VRS-CY1JF273J*	X 27k	1/16W	Metal Oxide	AA
R232	VRS-CY1JF471J*	X 470	1/16W	Metal Oxide	AA
R234	VRD-RA2BE271J*	X 270	1/8W	Carbon	AA
R236	VRS-CY1JF332J*	X 3.3k	1/16W	Metal Oxide	AA
R301	VRS-CY1JF222J*	X 2.2k	1/16W	Metal Oxide	AA
R305	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
R306	VRS-CY1JF102J*	X 1k	1/16W	Metal Oxide	AA
R307	VRS-CY1JF101J*	X 100	1/16W	Metal Oxide	AA
R308	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
R361	VRD-RA2BE224J*	X 220k	1/8W	Carbon	AA
R362	VRS-CY1JF222J*	X 2.2k	1/16W	Metal Oxide	AA
R363	VRS-CY1JF222J*	X 2.2k	1/16W	Metal Oxide	AA
R364	VRD-RA2BE102J*	X 1k	1/8W	Carbon	AA
R365	VRS-CY1JF102J*	X 1k	1/16W	Metal Oxide	AA
R368	VRD-RA2BE222J*	X 2.2k	1/8W	Carbon	AA
R369	VRD-RA2BE822J*	X 8.2k	1/8W	Carbon	AA
R371	VRS-CY1JF102J*	X 1k	1/16W	Metal Oxide	AA
R372	VRS-CY1JF223J*	X 22k	1/16W	Metal Oxide	AA
R403	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
R404	VRS-CY1JF683J*	X 68k	1/16W	Metal Oxide	AA
R406	VRS-CY1JF473J*	X 47k	1/16W	Metal Oxide	AA
R407	VRS-CY1JF102J*	X 1k	1/16W	Metal Oxide	AA
R408	VRS-CY1JF683J*	X 68k	1/16W	Metal Oxide	AA
R410	VRS-CY1JF473J*	X 47k	1/16W	Metal Oxide	AA
R411	VRS-CY1JF102J*	X 1k	1/16W	Metal Oxide	AA
R412	VRS-CY1JF101J*	X 100	1/16W	Metal Oxide	AA
R413	VRS-CY1JF101J*	X 100	1/16W	Metal Oxide	AA
R414	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
R415	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA

Ref. No.	Part No.	★	Description		Code
R422	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
R430	VRS-CY1JF391J*	X 390	1/16W	Metal Oxide	AA
R431	VRS-CY1JF331J*	X 330	1/16W	Metal Oxide	AA
R432	VRS-CY1JF102J*	X 1k	1/16W	Metal Oxide	AA
R436	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
R437	VRS-CY1JF101J*	X 100	1/16W	Metal Oxide	AA
R438	VRS-CY1JF101J*	X 100	1/16W	Metal Oxide	AA
R439	VRS-CY1JF104J*	X 100k	1/16W	Metal Oxide	AA
R441	VRS-CY1JF472J*	X 4.7k	1/16W	Metal Oxide	AA
R442	VRS-CY1JF101J*	X 100	1/16W	Metal Oxide	AA
R444	VRS-CY1JF332J*	X 3.3k	1/16W	Metal Oxide	AA
R445	VRS-CY1JF332J*	X 3.3k	1/16W	Metal Oxide	AA
R446	VRS-CY1JF332J*	X 3.3k	1/16W	Metal Oxide	AA
R447	VRS-CY1JF101J*	X 100	1/16W	Metal Oxide	AA
R448	VRS-CY1JF101J*	X 100	1/16W	Metal Oxide	AA
R449	VRS-CY1JF101J*	X 100	1/16W	Metal Oxide	AA
△ R451	VRS-RG3AB103J+	X 10k	1W	Metal Oxide	AB
R452	VRD-RM2HD823J*	X 82k	1/2W	Carbon	AA
R453	VRD-RM2HD223J*	X 22k	1/2W	Carbon	AA
R454	VRS-CY1JF471J*	X 470	1/16W	Metal Oxide	AA
R456	VRS-CY1JF103J*	X 10k	1/16W	Metal Oxide	AA
R460	VRS-CY1JF471J*	X 470	1/16W	Metal Oxide	AA
R461	VRS-CY1JF562J*	X 5.6k	1/16W	Metal Oxide	AA
R462	VRS-CY1JF223J*	X 22k	1/16W	Metal Oxide	AA
R463	VRD-RA2EE680J*	X 68	1/4W	Carbon	AA
R464	VRS-CY1JF683J*	X 68k	1/16W	Metal Oxide	AA
R467	VRS-CY1JF123J*	X 12k	1/16W	Metal Oxide	AA
R483	VRS-CY1JF101J*	X 100	1/16W	Metal Oxide	AA
△ R501	VRN-RL3ABR47J+	X 0.47	1W	Metal Film	AB
R502	VRN-RA2BK822F*	X 8.2k	1/8W	Metal Film	AA
R503	VRS-CY1JF105J*	X 1M	1/16W	Metal Oxide	AA
R504	VRS-CY1JF154J*	X 150k	1/16W	Metal Oxide	AA
R505	VRS-CY1JF101J*	X 100	1/16W	Metal Oxide	AA
R510	VRN-RA2BK103F*	X 10k	1/8W	Metal Film	AA
R511	VRN-RA2BK222F*	X 2.2k	1/8W	Metal Film	AA
R512	VRN-RA2BK272F*	X 2.7k	1/8W	Metal Film	AA
R513	VRD-RM2HD1R5J*	X 1.5	1/2W	Carbon	AA
R517	VRS-CY1JF104J*	X 100k	1/16W	Metal Oxide	AA
R518	VRS-CY1JF102J*	X 1k	1/16W	Metal Oxide	AA
R521	VRS-CY1JF101J*	X 100	1/16W	Metal Oxide	AA
△ R523	VRN-RL3DBR82J+	X 0.82	2W	Metal Film	AB
△ R524	VRS-RG3AB561J+	X 560	1W	Metal Oxide	AA
R601	VRS-CY1JF101J*	X 100	1/16W	Metal Oxide	AA
R603	VRD-RA2BE472J*	X 4.7k	1/8W	Carbon	AA
△ R604	VRS-KA3NG222J	X 2.2k	7W	Metal Oxide	AB
R605	VRD-RM2HD331J*	X 330	1/2W	Carbon	AA
R606	VRD-RM2HD331J*	X 330	1/2W	Carbon	AA
△ R609	VRS-RG3AB562J+	X 5.6k	1W	Metal Oxide	AB
R610	VRD-RM2HD220J*	X 22	1/2W	Carbon	AA
△ R611	VRW-KQ41C3R3K	X 3.3	15W	Cement	AB
R612	VRS-CY1JF154J*	X 150k	1/16W	Metal Oxide	AA
R613	VRS-CY1JF101J*	X 100	1/16W	Metal Oxide	AA
R614	VRS-CY1JF562J*	X 5.6k	1/16W	Metal Oxide	AA
R618	VRS-CY1JF101J*	X 100	1/16W	Metal Oxide	AA
R621	VRN-RL3DB1R5J+	X 1.2	2W	Metal Film	AA
R622	VRN-RL3ABR47J+	X 0.27	1W	Metal Film	AB
R623	VRN-RL3AB4R7J+	X 4.7	1W	Metal Film	AB
△ R624	VRS-RG3DB332J+	X 3.3k	2W	Metal Oxide	AB
R625	VRD-RA2BE102J*	X 1k	1/8W	Carbon	AA
△ R627	VRN-RL3ABR47J+	X 0.47	1W	Metal Film	AB
△ R628	VRN-RL3ABR47J+	X 0.47	1W	Metal Film	AB
▲ R651	VRS-RG2HC270J+	X 27	1/2W	Metal Oxide	AB
▲ R652	VRD-RA2EE103G*	X 10k	1/4W	Carbon	AA
▲ R653	VRD-RA2EE562G*	X 5.6k	1/4W	Carbon	AA
△ R658	VRS-RG3LB333J+	X 33k	3W	Metal Oxide	AB
R663	VRS-CY1JF102J*	X 1k	1/16W	Metal Oxide	AA
R670	VRS-CY1JF000J*	X 0	1/16W	Metal Oxide	AA
R684	VRD-RA2BE472J*	X 4.7k	1/8W	Carbon	AA
R685	VRD-RA2BE822J*	X 8.2k	1/8W	Carbon	AA
R686	VRD-RA2EE332J*	X 3.3k	1/4W	Carbon	AA
R687	VRD-RA2BE103J*	X 10k	1/8W	Carbon	AA
△ R688	VRN-RL3DB3R3J+	X 3.3	2W	Metal Film	AB
R689	VRD-RM2HD824J*	X 820k	1/2W	Carbon	AA
△ R690	VRS-RG3LB471J+	X 470	3W	Metal Oxide	AB
R691	VRS-CY1JF394J*	X 390k	1/16W	Metal Oxide	AA

Ref. No.	Part No.	★	Description	Code
PWB-A: DUNTKB567WEY3				
MAIN UNIT(Continued)				
R692	VRS-CY1JF223J*	X 22k	1/16W Metal Oxide	AA
R693	VRS-CY1JF683J*	X 68k	1/16W Metal Oxide	AA
R694	VRS-CY1JF102J*	X 1k	1/16W Metal Oxide	AA
R695	VRS-CY1JF683J*	X 68k	1/16W Metal Oxide	AA
R696	VRS-CY1JF000J*	X 0	1/16W Metal Oxide	AA
△ R701	RR-DZ0049CEZZ*	X 3.9M	1/2W Solid	AB
△ R703	VRW-KQ4AC1R2K	X 1.2	10W Cement	AB
△ R705	VRN-RL3DBR15J+	X 0.15	2W Metal Film	AB
△ R706	VRN-RL3DBR18J+	X 0.18	2W Metal Film	AB
R707	VRD-RM2HD270J*	X 27	1/2W Carbon	AA
R708	VRS-CY1JF102J*	X 1k	1/16W Metal Oxide	AA
R709	VRS-CY1JF000J*	X 0	1/16W Metal Oxide	AA
△ R710	VRS-RG2HC103J+	X 10k	1/2W Metal Oxide	AB
R711	VRS-CY1JF334J*	X 330k	1/16W Metal Oxide	AA
R712	VRD-RM2HD100J*	X 10	1/2W Carbon	AA
△ R713	VRS-RG2HC122J+	X 1.2k	1/2W Metal Oxide	AB
R715	VRD-RM2HD5R6J*	X 5.6	1/2W Carbon	AA
R716	VRD-RM2HD100J*	X 10	1/2W Carbon	AA
R720	VRD-RA2BE473J*	X 47k	1/8W Carbon	AA
R724	VRS-CY1JF000J*	X 0	1/16W Metal Oxide	AA
R725	VRD-RM2HD221J*	X 220	1/2W Carbon	AA
R734	VRD-RM2HD124J*	X 120k	1/2W Carbon	AA
△ R737	VRN-RL3DBR56J+	X 0.56	2W Metal Film	AB
R742	VRD-RA2BE222J*	X 2.2k	1/8W Carbon	AA
R743	VRD-RM2HD470J*	X 47	1/2W Carbon	AA
R751	VRD-RA2BE473J*	X 47k	1/8W Carbon	AA
R752	VRD-RA2BE392J*	X 3.9k	1/8W Carbon	AA
R753	VRS-CY1JF222J*	X 2.2k	1/16W Metal Oxide	AA
R754	VRS-CY1JF222J*	X 2.2k	1/16W Metal Oxide	AA
R755	VRS-CY1JF473J*	X 47k	1/16W Metal Oxide	AA
R756	VRD-RA2BE152J*	X 1.5k	1/8W Carbon	AA
△ R757	VRN-RL3DBR47J+	X 4.7	2W Metal Film	AB
R759	VRS-CY1JF103J*	X 10k	1/16W Metal Oxide	AA
R761	VRS-CY1JF332J*	X 3.3k	1/16W Metal Oxide	AA
R762	VRD-RA2BE103J*	X 10k	1/8W Carbon	AA
R764	VRD-RM2HD562J*	X 5.6k	1/2W Carbon	AA
R767	VRD-RM2HD151J*	X 150	1/2W Carbon	AA
R768	VRD-RA2BE473J*	X 47k	1/8W Carbon	AA
R770	VRS-CY1JF102J*	X 1k	1/16W Metal Oxide	AA
R775	VRS-CY1JF332J*	X 3.3k	1/16W Metal Oxide	AA
R776	VRS-CY1JF332J*	X 3.3k	1/16W Metal Oxide	AA
R801	VRS-CY1JF333J*	X 33k	1/16W Metal Oxide	AA
R802	VRS-CY1JF471J*	X 470	1/16W Metal Oxide	AA
R803	VRS-CY1JF000J*	X 0	1/16W Metal Oxide	AA
R805	VRS-CY1JF682J*	X 6.8k	1/16W Metal Oxide	AA
R806	VRS-CY1JF681J*	X 680	1/16W Metal Oxide	AA
R807	VRS-CY1JF681J*	X 680	1/16W Metal Oxide	AA
R808	VRS-CY1JF681J*	X 680	1/16W Metal Oxide	AA
R810	VRS-CY1JF472J*	X 4.7k	1/16W Metal Oxide	AA
R924	VRS-CY1JF750J*	X 75	1/16W Metal Oxide	AA
R925	VRS-CY1JF750J*	X 75	1/16W Metal Oxide	AA
R926	VRS-CY1JF680J*	X 68	1/16W Metal Oxide	AA
R927	VRS-CY1JF750J*	X 75	1/16W Metal Oxide	AA
R929	VRS-CY1JF473J*	X 47k	1/16W Metal Oxide	AA
R930	VRS-CY1JF473J*	X 47k	1/16W Metal Oxide	AA

Ref. No.	Part No.	★	Description	Code
R931	VRS-CY1JF750J*	X 75	1/16W Metal Oxide	AA
R932	VRS-CY1JF473J*	X 47k	1/16W Metal Oxide	AA
R933	VRS-CY1JF473J*	X 47k	1/16W Metal Oxide	AA
R934	VRS-CY1JF103J*	X 10k	1/16W Metal Oxide	AA
R935	VRS-CY1JF101J*	X 100	1/16W Metal Oxide	AA
R936	VRS-CY1JF223J*	X 22k	1/16W Metal Oxide	AA
R937	VRS-CY1JF101J*	X 100	1/16W Metal Oxide	AA
R938	VRS-CY1JF223J*	X 22k	1/16W Metal Oxide	AA
R939	VRS-CY1JF333J*	X 33k	1/16W Metal Oxide	AA
R940	VRS-CY1JF8R2J*	X 8.2	1/16W Metal Oxide	AA
R941	VRS-CY1JF101J*	X 100	1/16W Metal Oxide	AA
R942	VRS-CY1JF223J*	X 22k	1/16W Metal Oxide	AA
R943	VRS-CY1JF101J*	X 100	1/16W Metal Oxide	AA
R944	VRS-CY1JF223J*	X 22k	1/16W Metal Oxide	AA
R945	VRS-CY1JF101J*	X 100	1/16W Metal Oxide	AA
R946	VRS-CY1JF103J*	X 10k	1/16W Metal Oxide	AA
R947	VRS-CY1JF223J*	X 22k	1/16W Metal Oxide	AA
R948	VRS-CY1JF101J*	X 100	1/16W Metal Oxide	AA
R949	VRS-CY1JF223J*	X 22k	1/16W Metal Oxide	AA
R950	VRS-CY1JF750J*	X 75	1/16W Metal Oxide	AA
R951	VRD-RA2BE680J*	X 68	1/8W Carbon	AA
R952	VRS-CY1JF333J*	X 33k	1/16W Metal Oxide	AA
R954	VRS-CY1JF221J*	X 220	1/16W Metal Oxide	AA
R955	VRS-CY1JF221J*	X 220	1/16W Metal Oxide	AA
R957	VRS-CY1JF101J*	X 100	1/16W Metal Oxide	AA
R958	VRS-CY1JF101J*	X 100	1/16W Metal Oxide	AA
R959	VRS-CY1JF103J*	X 10k	1/16W Metal Oxide	AA
R960	VRS-CY1JF101J*	X 100	1/16W Metal Oxide	AA
R961	VRS-CY1JF102J*	X 1k	1/16W Metal Oxide	AA
R962	VRS-CY1JF332F*	X 3.3k	1/16W Metal Oxide	AA
R964	VRS-CY1JF101J*	X 100	1/16W Metal Oxide	AA
R967	VRS-CY1JF682J*	X 6.8k	1/16W Metal Oxide	AA
R968	VRS-CY1JF102J*	X 1k	1/16W Metal Oxide	AA
R969	VRS-CY1JF472F*	X 4.7k	1/16W Metal Oxide	AA
R970	VRD-RA2BE6R8J*	X 6.8	1/8W Carbon	AA
R971	VRS-CY1JF101J*	X 100	1/16W Metal Oxide	AA
R972	VRS-CY1JF101J*	X 100	1/16W Metal Oxide	AA
R973	VRS-CY1JF000J*	X 0	1/16W Metal Oxide	AA
R974	VRS-CY1JF103J*	X 10k	1/16W Metal Oxide	AA
R975	VRS-CY1JF333J*	X 33k	1/16W Metal Oxide	AA
R982	VRS-CY1JF750J*	X 75	1/16W Metal Oxide	AA
R983	VRS-CY1JF473J*	X 47k	1/16W Metal Oxide	AA
R984	VRS-CY1JF473J*	X 47k	1/16W Metal Oxide	AA
R2001	VRS-CY1JF102J*	X 1k	1/16W Metal Oxide	AA
R2004	VRS-CY1JF101J*	X 100	1/16W Metal Oxide	AA
R2006	VRS-CY1JF103J*	X 10k	1/16W Metal Oxide	AA
R2008	VRS-CY1JF102J*	X 1k	1/16W Metal Oxide	AA
R2010	VRS-CY1JF102J*	X 1k	1/16W Metal Oxide	AA
R2021	VRS-CY1JF334J*	X 330k	1/16W Metal Oxide	AA
R2024	VRS-CY1JF472J*	X 4.7k	1/16W Metal Oxide	AA
R2025	VRS-CY1JF472J*	X 4.7k	1/16W Metal Oxide	AA
R2026	VRS-CY1JF472J*	X 4.7k	1/16W Metal Oxide	AA
R2027	VRS-CY1JF102J*	X 1k	1/16W Metal Oxide	AA
R2028	VRD-RA2BE102J*	X 1k	1/8W Carbon	AA
R2031	VRS-CY1JF222J*	X 2.2k	1/16W Metal Oxide	AA
R2033	VRS-CY1JF334J*	X 330k	1/16W Metal Oxide	AA
R2040	VRS-CY1JF102J*	X 1k	1/16W Metal Oxide	AA
R2041	VRS-CY1JF333J*	X 33k	1/16W Metal Oxide	AA
R2042	VRS-CY1JF101J*	X 100	1/16W Metal Oxide	AA
R2043	VRS-CY1JF333J*	X 33k	1/16W Metal Oxide	AA
R2044	VRS-CY1JF153J*	X 15k	1/16W Metal Oxide	AA
R2046	VRS-CY1JF101J*	X 100	1/16W Metal Oxide	AA
R2047	VRS-CY1JF221J*	X 220	1/16W Metal Oxide	AA
R2048	VRS-CY1JF562J*	X 5.6k	1/16W Metal Oxide	AA
R2051	VRS-CY1JF102J*	X 1k	1/16W Metal Oxide	AA
R2060	VRS-CY1JF221J*	X 220	1/16W Metal Oxide	AA
R2061	VRS-CY1JF562J*	X 5.6k	1/16W Metal Oxide	AA
R2062	VRS-CY1JF223J*	X 22k	1/16W Metal Oxide	AA
R2063	VRS-CY1JF222J*	X 2.2k	1/16W Metal Oxide	AA
R2064	VRS-CY1JF332J*	X 3.3k	1/16W Metal Oxide	AA
R2073	VRS-CY1JF000J*	X 0	1/16W Metal Oxide	AA
R2084	VRS-CY1JF103J*	X 10k	1/16W Metal Oxide	AA
R2086	VRS-CY1JF101J*	X 100	1/16W Metal Oxide	AA
R2090	VRS-CY1JF101J*	X 100	1/16W Metal Oxide	AA

Ref. No.	Part No.	★	Description	Code
PWB-A: DUNTKB567WEY3				
MAIN UNIT(Continued)				
R2092	VRS-CY1JF101J*	X	100 1/16W Metal Oxide	AA
R2101	VRS-CY1JF101J*	X	100 1/16W Metal Oxide	AA
R2102	VRS-CY1JF101J*	X	100 1/16W Metal Oxide	AA
R2201	VRS-CY1JF222J*	X	2.2k 1/16W Metal Oxide	AA
R2202	VRS-CY1JF103J*	X	10k 1/16W Metal Oxide	AA
R2203	VRS-CY1JF473J*	X	47k 1/16W Metal Oxide	AA
R2211	VRS-CY1JF222J*	X	2.2k 1/16W Metal Oxide	AA
R2212	VRS-CY1JF682J*	X	6.8k 1/16W Metal Oxide	AA
R2213	VRS-CY1JF333J*	X	33k 1/16W Metal Oxide	AA
R2401	VRD-RA2BE101J*	X	100 1/8W Carbon	AA
R2402	VRD-RA2BE101J*	X	100 1/8W Carbon	AA
R2403	VRD-RA2BE101J*	X	100 1/8W Carbon	AA
R2404	VRD-RA2BE101J*	X	100 1/8W Carbon	AA
R2501	VRS-CY1JF183J*	X	18k 1/16W Metal Oxide	AA
R2502	VRS-CY1JF183J*	X	18k 1/16W Metal Oxide	AA
R2503	VRS-CY1JF103J*	X	10k 1/16W Metal Oxide	AA
R2504	VRS-CY1JF103J*	X	10k 1/16W Metal Oxide	AA
R2505	VRD-RA2BE822J*	X	8.2k 1/8W Carbon	AA
R2506	VRD-RA2BE822J*	X	8.2k 1/8W Carbon	AA
R2507	VRD-RA2BE183J*	X	18k 1/8W Carbon	AA
R2508	VRD-RA2BE183J*	X	18k 1/8W Carbon	AA
R2509	VRS-CY1JF000J*	X	0 1/16W Metal Oxide	AA
R2601	VRD-RA2BE100J*	X	10 1/8W Carbon	AA
R2603	VRS-CY1JF000J*	X	0 1/16W Metal Oxide	AA
R2605	VRS-CY1JF000J*	X	0 1/16W Metal Oxide	AA
R2606	VRS-CY1JF000J*	X	0 1/16W Metal Oxide	AA
R3001	VRS-CY1JF221J*	X	220 1/16W Metal Oxide	AA
R3002	VRS-CY1JF221J*	X	220 1/16W Metal Oxide	AA
R3003	VRS-CY1JF105J*	X	1M 1/16W Metal Oxide	AA
R3004	VRS-CY1JF104J*	X	100k 1/16W Metal Oxide	AA
R3005	VRS-CY1JF623J*	X	62k 1/16W Metal Oxide	AA
R3007	VRS-CY1JF332J*	X	3.3k 1/16W Metal Oxide	AA
R3008	VRS-CY1JF302J*	X	3k 1/16W Metal Oxide	AA
R3010	VRS-CY1JF392J*	X	3.9k 1/16W Metal Oxide	AA
R3017	VRS-CY1JF102J*	X	1k 1/16W Metal Oxide	AA
R3018	VRS-CY1JF102J*	X	1k 1/16W Metal Oxide	AA
R3019	VRS-CY1JF101J*	X	100 1/16W Metal Oxide	AA
R3024	VRD-RA2BE102J*	X	1k 1/8W Carbon	AA
SWITCHES				
S2501	QSW-KA003WJZZ+	X	Switch, POWER	AB
S2502	QSW-KA003WJZZ+	X	Switch, MENU	AB
S2503	QSW-KA003WJZZ+	X	Switch, VOL-DOWN	AB
S2504	QSW-KA003WJZZ+	X	Switch, VOL-UP	AB
S2505	QSW-KA003WJZZ+	X	Switch, CH-DOWN	AB
S2506	QSW-KA003WJZZ+	X	Switch, CH-UP	AB
BALUNES				
FB601	RBLN-0047CEZZ*	X	Balun	AB
FB706	RBLN-0037CEZZ*	X	Balun	AA
FB2001	RBLN-0037CEZZ*	X	Balun	AA
MISCELLANEOUS PARTS				
△ ACC701	QACCD012WJJPZ	X	AC Cord	AE
△ F701	QFS-B4023CEZZ	X	Fuse, 4A / 125V	AB
FH701	QFSDH1013CEZZ+	X	Fuse Holder	AA
FH702	QFSDH1014CEZZ+	X	Fuse Holder	AA
J904	QJAKGA032WJZZ	X	Jack, FRONT IN	AC
J921	QSOD0430CEZZ	X	Socket, S-VIDEO	AC
J1401	QTANJ1101SEZZ	X	In Out Jack	AF
P361	QPLGN0461CEZZA	X	Plug, 4Pin (S1-4)	AB
P402	QPLGN0661CEZZA	X	Plug, 6Pin (CJ)	AB
P601	QPLGN0161FJZZ	X	Plug, 5Pin (K1-5)	AB
P622	QPLGN0461CEZZA	X	Plug, 4Pin (YBN)	AB
P651	QPLGN0361CEZZA	X	Plug, 3Pin (TP651-3)	AB
P702	QPLGN0269GEZZ	X	Plug, 2Pin (P1-2)	AB
P703	QPLGN0260CEZZ	X	Plug, 2Pin (M1-2)	AB
P2401	QPLGN0661CEZZA	X	Plug, 6Pin	AB
RDA361	PRDAR0258PEFW	X	Heat Sink for IC361	AC
RDA501	PRDARA039WJFW	X	Heat Sink for IC501	AD
RDA601	PRDARA041WJFW	X	Heat Sink for Q602	AD

Ref. No.	Part No.	★	Description	Code
RDA671	PRDARA057WJFW	X	Heat Sink for Q673	AC
RDA701	PRDAR0279PEFW	X	Heat Sink for Q701	AB
RDA750	PRDAR5072CEFW	X	Heat Sink for IC751	AB
RDA1403	PRDAR5072CEFW	X	Heat Sink for IC1403	AB
RM2601	RRMCU0222CEZZ	X	Remote Receiver	AD
RY701	RRLYJ0081CEZZ	X	Relay	AD
CF2040	RCRM-0003CEZZ+	X	Ceramic Vibrator	AC
TP701	QLUGP0102PEZZ	X	Lug	AA

PWB-B: DUNTKB568WEV1 CRT Unit

TRANSISTORS

Q850	VS2SC4544LB1E	X	2SC4544LB	AC
Q851	VS2SC4544LB1E	X	2SC4544LB	AC
Q852	VS2SC4544LB1E	X	2SC4544LB	AC
Q853	VS2SC3198-G-1+	X	2SC3198-G	AB
Q854	VS2SC3198-G-1+	X	2SC3198-G	AB
Q855	VS2SC3198-G-1+	X	2SC3198-G	AB
Q890	VS2SC3198-G-1+	X	2SC3198-G	AB
Q891	VS2SA1266-Y-1+	X	2SA1266-Y	AB
Q894	VS2SA1266-Y-1+	X	2SA1266-Y	AB

DIODES

D850	VHD1SS119/-1*	X	1SS119	AA
D851	VHD1SS119/-1*	X	1SS119	AA
D852	VHD1SS119/-1*	X	1SS119	AA
D891	VHD1SS119/-1*	X	1SS119	AA
D892	VHD1SS119/-1*	X	1SS119	AA
D893	VHD1SS119/-1*	X	1SS119	AA
D894	VHD1SS119/-1*	X	1SS119	AA
D895	VHD1SS119/-1*	X	1SS119	AA
D896	RH-EX0616GEZZ*	X	Zener Diode, 5.6V	AB
D897	VHD1SS119/-1*	X	1SS119	AA
D898	VHD1SS119/-1*	X	1SS119	AA
D899	VHD1SS119/-1*	X	1SS119	AA

COILS

L852	VP-MK221K0000+	X	Peaking 220μH	AB
L853	VP-MK221K0000+	X	Peaking 220μH	AB
L854	VP-MK221K0000+	X	Peaking 220μH	AB

CAPACITORS

C850	VCKYPA1HF103Z+	X	0.01 50V Ceramic	AA
C851	VCEA0A1CW107M+X	100	16V Electrolytic	AA
C852	VCKYPA1HB102K+	X	1000p 50V Ceramic	AA
C876	VCCSPA1HL561J+	X	560p 50V Ceramic	AB
C877	VCCSPA1HL471J+	X	470p 50V Ceramic	AA
C878	VCCSPA1HL561J+	X	560p 50V Ceramic	AB
C879	VCEA0A1EW476M+X	47	25V Electrolytic	AA
C880	RC-KZ018JCEZZ	X	0.01 3kV Ceramic	AB
C890	VCEA0A1CW227M+X	220	16V Electrolytic	AB
C892	VCEA0A1HW106M+X	10	50V Electrolytic	AA
C893	VCEA0A1HW106M+X	10	50V Electrolytic	AA
C895	VCEA0A1HW226M+X	22	50V Electrolytic	AA
C896	VCEA0A2EW106M+X	10	250V Electrolytic	AB

RESISTORS

R842	VRD-RM2HD104J*	X	100k 1/2W Carbon	AA
R849	VRD-RA2BE271J*	X	270 1/8W Carbon	AA
R850	VRD-RA2BE561J*	X	560 1/8W Carbon	AA
R851	VRD-RA2BE561J*	X	560 1/8W Carbon	AA
R852	VRD-RA2BE561J*	X	560 1/8W Carbon	AA
R854	VRD-RA2BE271J*	X	270 1/8W Carbon	AA
R855	VRD-RA2BE271J*	X	270 1/8W Carbon	AA
R856	VRD-RA2BE121J*	X	120 1/8W Carbon	AA
R857	VRD-RA2BE121J*	X	120 1/8W Carbon	AA
R858	VRD-RA2BE121J*	X	120 1/8W Carbon	AA
△ R859	VRS-VV3DB273J	X	27k 2W Metal Oxide	AA
△ R860	VRS-VV3DB273J	X	27k 2W Metal Oxide	AA
△ R861	VRS-VV3DB273J	X	27k 2W Metal Oxide	AA

Ref. No.	Part No.	★	Description	Code
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PWB-B: DUNTKB568WEV1 CRT UNIT(Continued)

△ R862	VRS-VV3DB273J	X	27k 2W	Metal Oxide	AA
△ R863	VRS-VV3DB273J	X	27k 2W	Metal Oxide	AA
△ R864	VRS-VV3DB273J	X	27k 2W	Metal Oxide	AA
R865	VRD-RA2BE103J*	X	10k 1/8W	Carbon	AA
R868	VRD-RM2HD224J*	X	220k 1/2W	Carbon	AA
R870	VRD-RA2BE471J*	X	470 1/8W	Carbon	AA
R871	VRD-RA2BE471J*	X	470 1/8W	Carbon	AA
R872	VRD-RA2BE471J*	X	470 1/8W	Carbon	AA
R873	VRD-RA2BE471J*	X	470 1/8W	Carbon	AA
R874	VRD-RA2BE471J*	X	470 1/8W	Carbon	AA
R875	VRD-RA2BE471J*	X	470 1/8W	Carbon	AA
R876	VRD-RA2BE121J*	X	120 1/8W	Carbon	AA
R877	VRD-RA2BE121J*	X	120 1/8W	Carbon	AA
R878	VRD-RA2BE121J*	X	120 1/8W	Carbon	AA
R879	VRD-RM2HD100J*	X	10 1/2W	Carbon	AA
R880	VRC-MA2HG332K*	X	3.3k 1/2W	Solid	AB
R881	VRC-MA2HG332K*	X	3.3k 1/2W	Solid	AB
R882	VRC-MA2HG332K*	X	3.3k 1/2W	Solid	AB
R883	VRD-RA2BE221J*	X	220 1/8W	Carbon	AA
R884	VRD-RA2BE221J*	X	220 1/8W	Carbon	AA
R885	VRD-RA2BE221J*	X	220 1/8W	Carbon	AA
R886	VRD-RA2BE471J*	X	470 1/8W	Carbon	AA
R887	VRD-RA2BE471J*	X	470 1/8W	Carbon	AA
R888	VRD-RA2BE471J*	X	470 1/8W	Carbon	AA
R890	VRD-RA2BE562J*	X	5.6k 1/8W	Carbon	AA
R891	VRD-RA2BE102G*	X	1k 1/8W	Carbon	AA
R892	VRD-RA2BE331G*	X	330 1/8W	Carbon	AA
R894	VRD-RA2BE152J*	X	1.5k 1/8W	Carbon	AA
R895	VRD-RA2EE561J*	X	560 1/4W	Carbon	AA
R899	VRD-RA2BE222J*	X	2.2k 1/8W	Carbon	AA

MISCELLANEOUS PARTS

P860	QPLGN0441CEZZ	X	Plug, 4Pin(YBN)	AA
P880	QPLGN0641CEZZ	X	Plug, 6Pin(CJ)	AB
SC850	QSOCV1011CEZZ	X	Socket, 12Pin	AC

PWB-D: DUNTKB572WEV0 2LINE Y/C Unit

INTEGRATED CIRCUIT

IC1401	VHiTC90A45F-1*	X	TC90A45F	AH
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TRANSISTORS

Q1401	VS2SD601AR/-1*	X	2SD601AR	AA
Q1402	VS2SD601AR/-1*	X	2SD601AR	AA
Q1404	VS2SB709AR/-1*	X	2SB709AR	AA

COILS

L1401	VP-XF100K0000*	X	Peaking, 10μH	AA
L1402	VP-XF100K0000*	X	Peaking, 10μH	AA
L1403	VP-XF100K0000*	X	Peaking, 10μH	AA
L1404	VP-XF220K0000*	X	Peaking, 22μH	AA
L1405	VP-XF220K0000*	X	Peaking, 22μH	AA
L1408	VP-XF100K0000*	X	Peaking, 10μH	AA

CAPACITORS

C1401	VCKYCY1HB103K*	X	0.01 50V	Ceramic	AA
C1402	VCEA0A1AW227M+	X	220 10V	Electrolytic	AB
C1403	VCCCCY1HH330J*	X	33p 50V	Ceramic	AA
C1404	VCCCCY1HH181J*	X	180p 50V	Ceramic	AA
C1405	VCKYCY1HB103K*	X	0.01 50V	Ceramic	AA
C1406	VCKYCY1HB103K*	X	0.01 50V	Ceramic	AA
C1407	VCKYCY1HB103K*	X	0.01 50V	Ceramic	AA
C1408	VCKYCY1HB103K*	X	0.01 50V	Ceramic	AA
C1409	VCEA0A1CW476M+	X	47 16V	Electrolytic	AA
C1410	VCKYCY1HB103K*	X	0.01 50V	Ceramic	AA
C1411	VCKYCY1HB103K*	X	0.01 50V	Ceramic	AA

Ref. No.	Part No.	★	Description	Code
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C1412	VCKYCY1HB103K*	X	0.01 50V	Ceramic	AA
C1413	VCKYCY1HB103K*	X	0.01 50V	Ceramic	AA
C1414	VCE9GA1HW105M+	X	1 50V	Electrolytic	AB
C1415	VCCCCY1HH120J*	X	12p 50V	Ceramic	AA
C1416	VCCCCY1HH3R0C*	X	3p 50V	Ceramic	AA
C1417	VCCCCY1HH270J*	X	27p 50V	Ceramic	AA
C1418	VCCCCY1HH120J*	X	12p 50V	Ceramic	AA
C1419	VCCCCY1HH3R0C*	X	3p 50V	Ceramic	AA
C1420	VCCCCY1HH270J*	X	27p 50V	Ceramic	AA
C1423	VCFYFA1HA474J+	X	0.47 50V		AB
C1424	VCEA0A1CW107M+	X	100 16V	Electrolytic	AA
C1425	VCCCCY1HH820J*	X	82p 50V	Ceramic	AA
C1429	VCEA0A1CW107M+	X	100 16V	Electrolytic	AA
C1430	VCKYCY1CB104K*	X	0.1 16V	Ceramic	AA
C1431	VCKYCY1HB103K*	X	0.01 50V	Ceramic	AA
C1432	VCKYCY1HB103K*	X	0.01 50V	Ceramic	AA

RESISTORS

R1401	VRS-CY1JF821J*	X	820 1/16W	Metal Oxide	AA
R1402	VRS-CY1JF000J*	X	0 1/16W	Metal Oxide	AA
R1403	VRS-CY1JF361J*	X	360 1/16W	Metal Oxide	AA
R1415	VRS-CY1JF391J*	X	390 1/16W	Metal Oxide	AA
R1416	VRS-CY1JF102J*	X	1k 1/16W	Metal Oxide	AA
R1417	VRS-CY1JF152J*	X	1.5k 1/16W	Metal Oxide	AA
R1420	VRN-RL3LB2R7J+	X	2.7 3W	Metal Film	AB
R1421	VRS-CY1JF152F*	X	1.5k 1/16W	Metal Oxide	AA
R1423	VRS-CY1JF102F*	X	1k 1/16W	Metal Oxide	AA
R1427	VRS-CY1JF000J*	X	0 1/16W	Metal Oxide	AA
R1428	VRD-RA2BE332J*	X	3.3k 1/8W	Carbon	AA
R1429	VRS-CY1JF000J*	X	0 1/16W	Metal Oxide	AA
R1430	VRS-CY1JF151J*	X	150 1/16W	Metal Oxide	AA

MISCELLANEOUS PART

P1401	QPLGZ0810CEZZ	X	Plug, 8Pin (CA)	AB
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Ref. No.	Part No.	★	Description	Code
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MISCELLANEOUS PARTS

VSP1206PB69WA	X	Speaker (L)	AG
VSP1206PB69WA	X	Speaker (R)	AG
QCNW-0136GJZZ	X	Connecting Cord	AC
QCNW-B174WJZZ	X	Connecting Cord	AD
QCNW-B126WJZZ	X	Connecting Cord	AC
QCNW-B127WJZZ	X	Connecting Cord	AB

SUPPLIED ACCESSORIES

RRMCG1324CESC	X	Infrared R-C Unit	AH
TINS-A709WJZZ	X	Operation Manual	
-			
-			

PACKING PARTS (NOT REPLACEMENT ITEM)

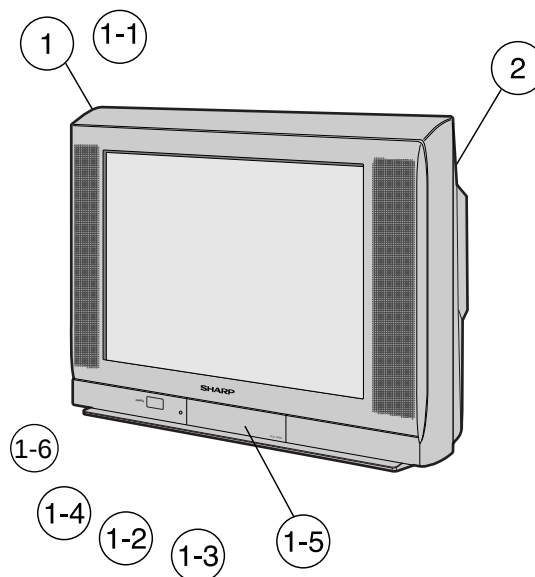
SPAKCA679WJZZ	-	Packing Case	-
SPAKP0110GJZZ	-	Wrapping Paper	-
SPAKXA241WJZ	-	Packing Add.	-
SSAKA0101GJZZ	-	Polyethylene Bag	-

Ref. No.	Part No.	★	Description	Code
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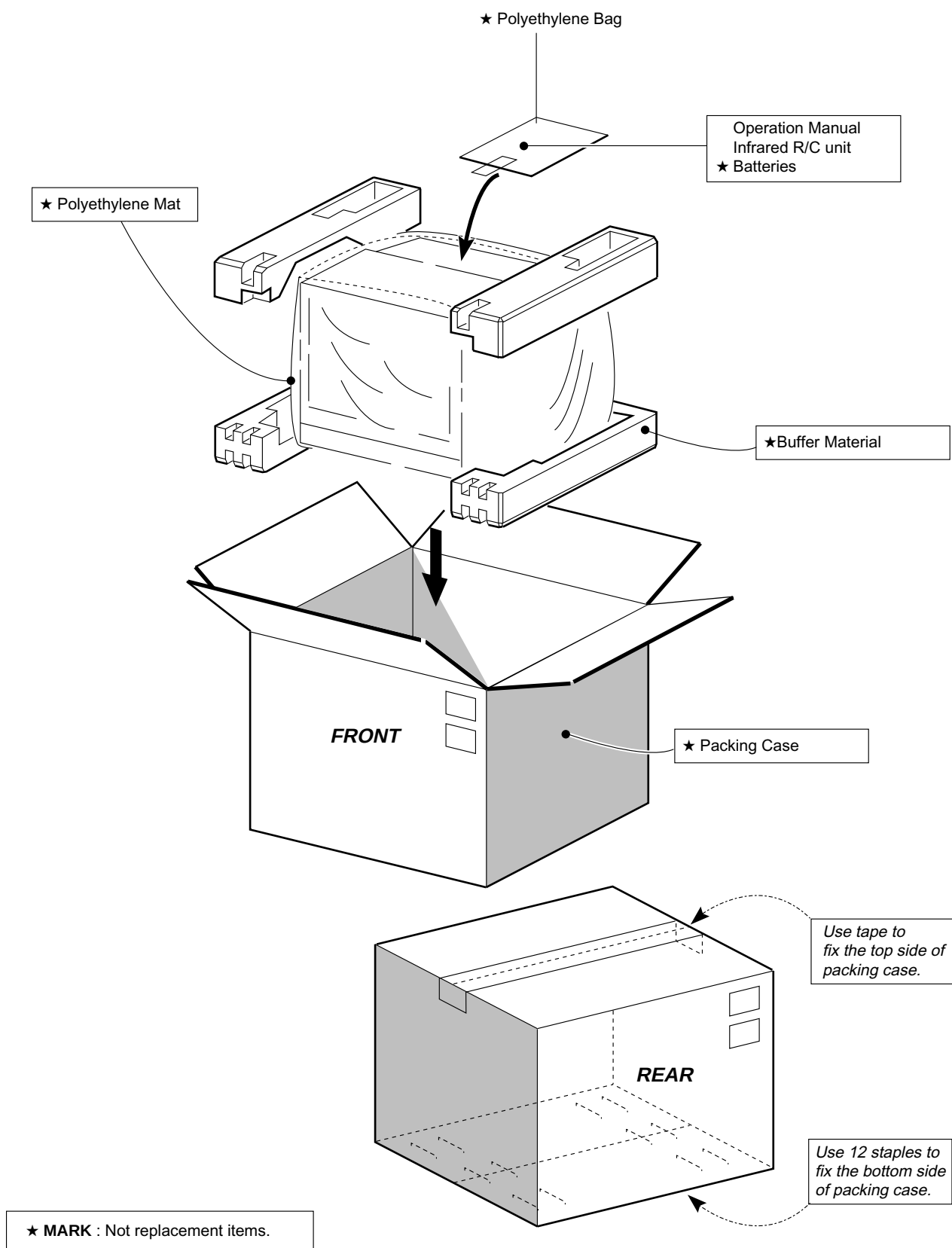
CABINET PARTS

1	CCABAA300WEH1	X	Front Cabinet Ass'y	BH
1-2	GCOVAA398WJSA	X	RC/LED Cover	
1-3	HBDGB1009MESB	X	"SHARP" Badge	AC
1-4	GCOVHA017WJK	X	Cover	AC
1-5	GDORFA044WJKA	X	Door	
1-6	JBTN-A155WJKA	X	Button, Power	
2	GCABBA187WJKA	X	REAR CABINET (32C230/231)	

CABINET PARTS LOCATION



PACKING OF THE SET



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QRC0003-U
April. 2003
Modify : SEMEX

Design and Production Information

Design base : JAPAN

Production : SEMEX

J B

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